

SPECIAL PUBLICATION SJ2008-SP22

**DEMINERALIZATION CONCENTRATE OCEAN OUTFALL
FEASIBILITY STUDY PHASE 2A
CONCEPTUAL OCEAN OUTFALL EVALUATION
APPENDIXES**



Appendix A. Source Water Quality for Membrane Water Treatment Plants in Florida (extracted from Reiss Environmental Database¹)

SOURCE WATER	Facility	Plant Description	TDS	Ba	Bromide	Ca	Cl	CO3	Cond.	Cu	D_O_	F	Fe	Gross A	H2S	HCO3	K	Mg	Mn	Na	NH3	NO3	pH	Ra 226/228	SiO2	SO4	Sr	sulfide	T_Hard_	T_P_	T_Alk_	TOC	Zn
-	Palm Beach Park	A NF plant	509-658	<0.10		123						0.22	4.26		0.08-14.7	324-395	1-4	308		48-110			7.1		18-24	8-24	<0.10			324			
-	St. Lucie West WTP	A reverse osmosis plant.	500						692-726				1.5 - 3										7										
Biscayne aquifer	Boynton Beach West WTP	A NF plant with 10% bypass.				39			592				0.04		0.75					23			7.27					257		234			
Biscayne aquifer	City of Plantation Central WTP		394-525				41-62					0.31	0.65-2.2						30-35			6.7-7.1			2-23								
Biscayne aquifer	City of Plantation East WTP	Membrane softening WTP producing a concentrate a peak flow of about 0.9 MGD.	320-400				54-74		640-800			0.31	0.8-2.2						30			6.9-7.3					250-360		240-310				
Biscayne aquifer	City of Sunrise Sawgrass Membrane Softening WTP	A membrane softening WTP producing up to 3.8 MGD concentrate. There have been several construction delays.	478-516			76						0.28-0.38	1.4-2.1						50-55			7.3			0								
Biscayne aquifer	Cooper City WTP	An NF plant		0.025		114	90					0.27	1.6				4	8	0.015	35		0.15	7.22			27	1						
Floridan aquifer	Carlton Water Treatment Plant	ED plant - largest in world	1030-2480				32-313																			580-1380							
Floridan aquifer	Charlotte Harbor	A reverse osmosis WTP producing a concentrate with an annual average daily flow of 0.15 MGD.		0.04		103	557	110.6					0.04			0.42	13.1	81.2		248			7.63			187	4.23		0.94				
Floridan aquifer	City of Port St. Lucie	New plant undergoing expansion from 4 MGD to 10 MGD by 1/2003. Presently have two skids of 1.7 MGD each. Produces about 825,000 gpd concentrate.	2092	0.022		76	815		3510			1.54	ND			145.6	22	73	ND	576			7.36		18.7	217	16.6		145.6	1.65			
Floridan aquifer	Dunedin RO WTP	An NF plant.	620	0.02			210					0.19	0.72	2.2					0.02	91		0.053	7.3			36							
Floridan aquifer	Ft. Pierce Utility Authority	A 4 MGD RO plant with 1.3 bypass.					310		1600														7.8										
Floridan aquifer	Halifax Plantation RO Plant	An existing plant producing 0.125 MGD of potable water byproduct.	480-675			110-130	77-270		980-1350				<0.005				0.3-16	9/18/2001		40-90			7.1-8.0			0.6-11			250-330				
Floridan aquifer	IRCUD/Hobart Park RO WTP	A reverse osmosis plant that produces, in the first phase, a maximum of 0.75 MGD concentrate.	640-780	0.023		54-63	221-306		1450	0.003		0.72-0.96	0.12	2-3.3	4.5		8	49	0.013	110-129		BDL			8	8-131	9.4	330	171		0.0027		
Floridan aquifer	IRCUD/South County Potable WTP	An existing facility that generates potable water byproduct at an average daily flow of 1.2 MGD with a maximum daily flow of 1.5 MGD.	824			48	246		1180				<0.0009				13.7	45.4		158			7.74			101		306					
Floridan	Jupiter RO	A reverse osmosis plant	3315-			115-	1566-					1-1.4				146-	43-	120-		908-					16	383-	15-17						

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SOURCE WATER	Facility	Plant Description	TDS	Ba	Bromide	Ca	Cl	CO3	Cond.	Cu	D_O_	F	Fe	Gross A	H2S	HCO3	K	Mg	Mn	Na	NH3	NO3	pH	Ra 226/228	SiO2	SO4	Sr	sulfide	T_Hard_	T_P_	T_Alk_	TOC	Zn	
aquifer	WTP	producing 4.0 MGD maximum design flow of concentrate.	5710			121	2970									148	49	204		1675						523								
Floridan aquifer	Melbourne RO	An existing reverse osmosis facility that produces 1.25 MGD of potable water byproduct.	1100 /1700			350	650		2400/2700			0.38	0.001				260						8					595		126	1.6			
Floridan aquifer	North Beach Utility RO		680				71		1040																	280								
Floridan aquifer	North Martin County WTP		2520	0.021			1500					0.8	0.19	11.4				0.36	450	1.97	0.01	7.43	3.4		205		662		162					
Floridan aquifer	Palm Coast WTP	A membrane softening facility discharging a maximum of 2.625 MGD of blended concentrate.	400-610	0.016-0.019		110-130	27-92		680-870			<0.25	0.09-1.9			0.8-1.6	3-11	0.005-0.026	16-41				6.9		14-17	2-8	0.36-0.49	300-360		300-320				
Floridan aquifer	Sailfish Point RO WTP	A reverse osmosis plant producing 0.115 MGD, maximum design flow, of concentrate. The plant is operated for about 13 hours per day for seven days per week and provides water treatment service for up to 665 housing units.	1485			50	960						<0.05		2.7	115	72						6.7		13.5	315	3.45	550		95				
Floridan aquifer	Spruce Creek Fly-In WTP	A reverse osmosis WTP that produces an average combined daily flow of 0.080 MGD of byproduct water with a maximum of 0.088 MGD. Modification of 3/14/2000 increased maximum daily flow to 0.125 MGD. The system is for polishing. It is a low recovery system.	412				58					0.3						0.01	34				7.3			<2.5								
Floridan aquifer	Sun & Fun	Getting ready (10/01) to change membranes and pressure vessels. They have been using the Permasep system.	928	<0.05		110	34					1.2					3.2	55		21.5			6.85			410	21.4			138				
Floridan aquifer	Vero Beach RO Potable WTP	An existing facility that treats water from a groundwater source to produce potable water. The potable water treatment facility produces a design flow of 2.0 MGD of product water based on the one existing RO skid, ...	900			62.8	367		1640							200.1	11.3	47.4		191			7.75			95.3		334		164				
Floridan aquifer	Village of Tequesta RO WTP	A reverse osmosis WTP concentrate with maximum design flow of 1.3 MGD, and avg. operational flow of 0.65 MGD.	4400	0.024		170	450		7500	0.0013		0.034	0.37					0.0082	1290		BDL	7.6					1125						0.00534	
Floridan aquifer Lower Hawthorne	Island Water Association RO WTP at	A reverse osmosis facility producing a concentrate with a design flow of 1.33 MGD and an avg. flow of	2650	0.03		91	1100					1.9	0.012				36	100		727		BDL	7.4		24	345	10		BDL	172				

Appendix A. Source Water Quality for Membrane Water Treatment Plants in Florida (extracted from Reiss Environmental Database¹)

SOURCE WATER	Facility	Plant Description	TDS	Ba	Bromide	Ca	Cl	CO3	Cond.	Cu	D_O_	F	Fe	Gross A	H2S	HCO3	K	Mg	Mn	Na	NH3	NO3	pH	Ra 226/228	SiO2	SO4	Sr	sulfide	T_Hard_	T_P_	T_Alk_	TOC	Zn	
aquifer	Sanibel Island	0.684 MGD.																																
Floridan aquifer (upper); also called Intermediate aquifer	City of Venice RO Plant	A reverse osmosis plant producing an average flow of 2.0 MGD and a maximum 7-day average flow of 3.56 MGD.	2888	0.03		454	548	0				0	0.03	--		96	9	194	0	228		0	7.4	--	29	1474	17		--	--				
Floridan aquifer	City of Palm Bay	The city bought the Indian River North Beach membrane plant, disassembled it and moved it to the present site.	1710 - 3060				830-1830				0.2-1.4		<0.02-0.3													130-198								
Lower Hawthorne aquifer	City of Cape Coral RO WTP	An existing RO drinking water treatment plant with a design concentrate flow of 3.05 MGD.	1470	0.02		63	820					3.27	0.07			248	20	106	ND	434			7.45		14	125	19				204			
Lower Hawthorne aquifer	Englewood Reverse Osmosis WTP	A reverse osmosis WTP.	5733			256	3333		10290								36	226		1432			7.4			517	33			1571		130		
RO pulls from Floridan aquifer; NF pulls from fresh water Biscayne aquifer.	City of Hollywood WTP - NF	A reverse osmosis and membrane softening WTP producing concentrate up to 2.2 MGD, annual average daily flow, or 5.3 MGD, maximum daily flow. The concentrate from the RO system contributes 36% of the total flow with the membrane softening concentrate cont	390	0.013			36			0.00053		0.13	0.3	3					BDL	18		0.021		1.7		36								
RO pulls from Floridan aquifer; NF pulls from fresh water Biscayne aquifer.	City of Hollywood WTP - RO	A reverse osmosis and membrane softening WTP producing concentrate up to 2.2 MGD, annual average daily flow, or 5.3 MGD, maximum daily flow.	4400	BDL			2100							20					BDL	1100				2.7		730								
Surficial	City of Wellington	An NF plant		0.019		152.4	302			<0.05		<0.4	<0.05			518.29	11	25.85	<0.01	200		<1	7.4		19.5	69	1.7			489				
Surficial aquifer	City of Fort Myers WTP	A membrane plant producing design and average concentrate flows of 1.2 MGD and 0.8 MGD respectively. Concentrate flows are expected to increase over the term of the permit (1997).	345			74	65		605		0.13	0.2	0.34					10					6.87						226		194			
Surficial aquifer	Holiday Pines Condominium	The maximum permitted daily concentrate production rate is 0.12 MGD.										0.25-0.4								38-89			7.1											
Surficial aquifer	Palm Beach county #9 WTP - Sandlefoot	A NF plant with 4 MGD bypass in addition to the NF MGD production.	422	0.0348			50.5			0.0003		1.33	0.076	0.7					0.009	28.8				1.8		35.9							0.0034	

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	Cove																																	
Surficial aquifer	Palm Beach County Membrane Softening WTP #3	A NF plant.	358-422			108-133	41-71		500-623				0.01-0.2										7.05-7.3						242-287			9.3-13.9		
Surficial aquifer	Spanish Lakes Fairways RO WTP	A reverse osmosis WTP producing concentrate of daily flow of approximately 42,000 gpd based on a flow rate of 92 gpm and a 7-hour operation schedule; but flow can vary. Maximum concentrate daily flow is 0.193 MGD.	131	0.0018		32				0.0262		0.105	0.29	0						22.2			7.47			32							0.0114	
Surficial aquifer	Tropical Farms WTP	An NF plant producing approximately 400,000 gpd of concentrate.	280-352	<0.002		25-56	17-31			<0.02	0.1-0.6		0.1-3.5		<0.02-0.09		3-4	0.033-0.049		15-22			7.2-7.44		16-18	1-35				200-235				
Surficial/ocean	Marathon RO Plant	Plant serves as an emergency RO potable water production plant.	37200	0.01	65	400	20800		49000	<0.02		0.84	0.2 (est.)	28		145	385	1250		11000	<0.05	BDL	7.6		9.5	2910	13		6145	0.95	120	<1.0	0.05	
Surficial/ocean	Stock Island RO Plant	This is a seawater RO plant that uses old membranes and old equipment.	37200	0.01	65	400	20800		49000	<0.02		0.84	0.2 (est.)	28		145	385	1250		11000	<0.05	BDL	7.6		9.5	2910	13		6145	0.95	120	<1.0	0.05	
Upper Floridan aquifer	City of Sarasota RO/IX WTP	A reverse osmosis WTP with a design capacity of 4.0 MGD producing an avg. monthly flow of 2.8 MGD concentrate.	2040	0.04		263	386		2680			1.3	0.012		2.5		6.3	121	<0.005	182		<0.02	7.11		23	838	23		1153	<0.3	129	1.9		
Upper Floridan aquifer	Wauchula	An NF plant built to treat for TDS and sulfate.		0.04		77	10					0.52		7.5			34		40			0.04		2.8	18	270				149				
Upper Hawthorn aquifer	Burnt Store Utility WTP	A reverse osmosis plant concentrate with a flow of 0.26 MGD.	2000	0.057		120			3300				<0.025			18	96	<0.0038	460	0.88		7.1		22		29	2.5	750		260	1.3			
Upper Hawthorne aquifer	Pine Island RO WTP	A reverse osmosis WTP producing by-product water with an annual average permitted flow of 0.15 MGD.		0.06		91	877		3300			1.4	0.01			20	96		457			7.6		19	217	12				155				

¹The plants in this table are the only operating WTP greater than 0.1mgd in Florida with available feed water quality data, according to Reiss Environmental (2003)
Blanks means no reported data in database

Appendix B. Concentrate Water Quality for Membrane Water Treatment Plants in Florida (extracted from Reiss Environmental Database¹)

SOURCE WATER	Facility	Plant Description	TDS	Ba	Ca	Cl	cond.	Cr	Cu	D_O_	F	Fe	Gross A	H2S	HCO 3	K	Mg	Mn	Na	NH3	NO3	pH	Ra 226/228	salinity	SiO 2	SO4	Sr	sulfide	T_Hard	T_Kj_N	T_P_	T_Alk	T_N_	TOC	Zn	
-	Palm Beach Park	A NF plant	1524		340																	6.1													208	
Biscayne aquifer	Boynton Beach West WTP	A NF plant with 10% bypass.				119	2060					0.36	7						67				2.3						1159	3.86	0.36	531	3.86			
Biscayne aquifer	City of Plantation Central WTP		2350	<0.008		320			<0.008		0.95	9.26	18.9					0.034	145	3.51	<0.02	7.64	6.3		750						6.04	<0.5	680			
Biscayne aquifer	City of Plantation East WTP	Membrane softening WTP producing a concentrate a peak flow of about 0.9 MGD.	2350	<0.008		320			<0.008		0.95	9.26	18.9					0.034	145	3.51	<0.02	7.64	6.3		750					6.04	<0.5	680				
Biscayne aquifer	Cooper City WTP	An NF plant	3800	0.15	720	360	3700				0.36	7				20	51	0.09	205			6.7			1550	6					0.3				106	
Floridan aquifer	Carlton Water Treatment Plant	ED plant - largest in world	5393		900	425	6253						12		129	15	406		101			7.35	7.8		3000				0.62	0.42			1.59			
Floridan aquifer	Charlotte Harbor	A reverse osmosis WTP producing a concentrate with an annual average daily flow of 0.15 MGD.	5600		360	2500					5.5				322	40	260		960						1100	76										
Floridan aquifer	City of Port St. Lucie	New plant undergoing expansion from 4 MGD to 10 MGD by 1/2003. Presently have two skids of 1.7 MGD each. Produces about 825,000 gpd concentrate.	9670	0.12	402	4038	14940				4.11	ND			384	110	376	ND	2788			6.82			53.5	1384	90					384		10.31		
Floridan aquifer	Dunedin RO WTP	An NF plant.	2400	0.05		620			0.02		0.35	0.04	7.7					0.04	280		0.79	5.8			840											
Floridan aquifer	Halifax Plantation RO Plant	An existing plant producing 0.125 MGD of potable water byproduct.	4680	0.118	670	766					1.7								280	4.53		7.6			7	3.9										
Floridan aquifer	IRCUD/Hobart Park RO WTP	A reverse osmosis plant that produces, in the first phase, a maximum of 0.75 MGD concentrate.				1320-2180		<0.011		7.1-7.6			21.2	<0.1								6.5-7.5	3.8-5.1							0.01			1-78-1.96			
Floridan aquifer	IRCUD/South County RO Potable WTP	An existing facility that generates potable water byproduct at an average daily flow of 1.2 MGD with a maximum daily flow of 1.5 MGD.								7.5-7.6			<7										5.1													
Floridan aquifer	Jupiter RO WTP	A reverse osmosis plant producing 4.0 MGD maximum design flow of concentrate.	11400		370	5900	28400			7.46	3.2		10		426	120	430		2900	0.07		7.06	2.4	17.1	1200	34				0.038			1.91			
Floridan aquifer	Melbourne RO	An existing reverse osmosis facility that produces 1.25 MGD of potable water byproduct.	1200-1530		576						1.44-1.71			<0.02		30	285								1170		<0.10									
Floridan aquifer	North Beach Utility RO		900			80	1590				1.5								97						440											
Floridan aquifer	North Martin County WTP		8840	0.0833	330	5200			0.005		2	0.68	42.9			--	380	0.00644	2110	2.05	0.189		14.2		1180			2400	2.47	< 0.01					<0.001	
Floridan	Palm Coast	A membrane softening	2550	0.081	475	265	2800				0.6	0.63				4.4	40	0.048	120	4.1		6.4			43	1050	1.9		1450			280			45	

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SOURCE WATER	Facility	Plant Description	TDS	Ba	Ca	Cl	cond.	Cr	Cu	D_O_	F	Fe	Gross A	H2S	HCO 3	K	Mg	Mn	Na	NH3	NO3	pH	Ra 226/228	salinity	SiO 2	SO4	Sr	sulfide	T_Hard_	T_Kj_N	T_P_	T_Alk_	T_N_	TOC	Zn		
aquifer	WTP	facility discharging a maximum of 2.625 MGD of blended concentrate.																																			
Floridan aquifer	Sailfish Point RO WTP	A reverse osmosis plant producing 0.115 MGD, maximum design flow, of concentrate. The plant is operated for about 13 hours per day for seven days per week and provides water treatment service for up to 665 housing units.				4000	13000				2.8			0.48							ND	8.46								2.5	3.6			2.5			
Floridan aquifer	Spruce Creek Fly-In WTP	A reverse osmosis WTP that produces an average combined daily flow of 0.080 MGD of byproduct water with a maximum of 0.088 MGD. Modification of 3/14/2000 increased maximum daily flow to 0.125 MGD. The system is for polishing.	1940			270					1.3						0.04	142				7.8				5.3											
Floridan aquifer	Vero Beach RO Potable WTP	An existing facility that treats water from a groundwater source to produce potable water. The potable water treatment facility produces a design flow of 2.0 MGD of product water based on the one existing RO skid.	5300		270	2000					5.3				212	62	280		990							1400	48										
Floridan aquifer	Village of Tequesta RO WTP	A reverse osmosis WTP concentrate with maximum design flow of 1.3 MGD, and average operational flow of 0.65 MGD.					27000			3.9	2			ND						ND	1.4			18					4.5	0.33			5.9				
Floridan aquifer Lower Hawthorne aquifer	Island Water Association RO WTP	A reverse osmosis facility producing a concentrate with a design flow of 1.33 MGD and an average flow of 0.684 MGD.	11000		478	4550	14800				8.86	0.1	182			155	567		3320	0.77		7.89	52			1620				1.48		86					
Floridan aquifer (upper); also called Intermediate aquifer	City of Venice RO Plant	A reverse osmosis plant producing an average flow of 2.0 MGD and a maximum 7-day average flow of 3.56 MGD.	8200	--	670	610					3.4	--			162	12	280	--	250	--	--				--	2800	24	--		--	--						
Floridan aquifer	City of Palm Bay	The city bought the Indian River North Beach membrane plant, disassembled it and moved it to the present site.				4650	16440															7.5						3020									
Lower Hawthorne aquifer	City of Cape Coral RO WTP	An existing RO drinking water treatment plant with a design concentrate flow of 3.05 MGD.	6300		250	2400					8.6				366	65	340		1200						1600	40											

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Lower Hawthorne aquifer	Englewood Reverse Osmosis WTP	A reverse osmosis WTP.	17900		869	10350	27900									110	693		4342			7.2				1680	98		5028				250			
RO pulls from Floridan aquifer; NF pulls from fresh water Biscayne aquifer.	City of Hollywood WTP - NF	A reverse osmosis and membrane softening WTP producing concentrate up to 2.2 MGD, annual average daily flow, or 5.3 MGD, maximum daily flow. The concentrate from the RO system contributes 36% of the total flow with the membrane softening concentrate cont							0.014	1.25										0.65		6.09														0.018
RO pulls from Floridan aquifer; NF pulls from fresh water Biscayne aquifer.	City of Hollywood WTP - RO	A reverse osmosis and membrane softening WTP producing concentrate up to 2.2 MGD, annual average daily flow, or 5.3 MGD, maximum daily flow. The concentrate from the RO system contributes 36% of the total flow with the membrane softening concentrate cont							0.014	1.25										0.65		6.09														0.018
Surficial	City of Wellington	An NF plant		<0.1	608	1040	5830				0.6				1951	40	103.2	0.012	726			8				73	229	5.5		1950			1600			
Surficial aquifer	City of Fort Myers WTP	A membrane plant producing design and average concentrate flows of 1.2 MGD and 0.8 MGD respectively. Concentrate flows are expected to increase over the term of the permit (1997).	8190			1000													486		0.04	6.41														
Surficial aquifer	Holiday Pines Condominium	The maximum permitted daily concentrate production rate is 0.12 MGD.						<0.003			1.8		12.3						630																	
Surficial aquifer	Palm Beach county #9 WTP - Sandfoot Cove	A NF plant with 4 MGD bypass in addition to the NF MGD production.			580																								1600			305			75.7	
Surficial aquifer	Palm Beach County Membrane Softening WTP #3	A NF plant.			580																								1600			305			75.7	
Surficial aquifer	Spanish Lakes Fairways RO WTP	A reverse osmosis WTP producing concentrate of daily flow of approximately 42,000 gpd based on a flow rate of 92 gpm and a 7-hour operation schedule; but flow can vary. Maximum concentrate daily flow is 0.193 MGD.	813-3380				1300-1740							<0.0051																						
Surficial	Tropical Farms	An NF plant producing																																		

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SOURCE WATER	Facility	Plant Description	TDS	Ba	Ca	Cl	cond.	Cr	Cu	D_O_	F	Fe	Gross A	H2S	HCO 3	K	Mg	Mn	Na	NH3	NO3	pH	Ra 226/228	salinity	SiO 2	SO4	Sr	sulfide	T_Hard	T_Kj_N	T_P_	T_Alk	T_N_	TOC	Zn	
aquifer	WTP	approximately 400,000 gpd of concentrate.																																		
Surficial/ocean	Marathon RO Plant	Plant serves as an emergency RO potable water production plant.	52562	18.6	567	29628	69000	<0.003	<0.03		1.2	<0.3	<40			548	1777	<0.07	15665	<0.07	<0.13	7.8			13.2	4150	18.6		8736		1.4	167		<0.43	<0.7	
Surficial/ocean	Stock Island RO Plant	This is a seawater RO plant that uses old membranes and old equipment.	52562	18.6	567	29628	69000	<0.003	<0.03		1.2	<0.3	<40			548	1777	<0.07	15665	<0.07	<0.13	7.8			13.2	4150	18.6		8736		1.4	167		<0.43	<0.7	
Upper Floridan aquifer	City of Sarasota RO/IX WTP	A reverse osmosis WTP with a design capacity of 4.0 MGD producing an average monthly flow of 2.8 MGD concentrate.	4300		520	890					2.2				42	12	250		340							2200	47									
Upper Floridan aquifer	Wauchula	An NF plant built to treat for TDS and sulfate.	2500		345	29									478		152		152							26	1324									
Upper Hawthorn aquifer	Burnt Store Utility WTP	A reverse osmosis plant concentrate with a flow of 0.26 MGD.	7600	0.22	450	4100	12000				4.6	<0.04				68	400	<0.01	1800			7.8			53	1100	26		3000			340		4.1		
Upper Hawthorne aquifer	Pine Island RO WTP	A reverse osmosis WTP producing by-product water with an annual average permitted flow of 0.15 MGD.	11127		584	4991					7.28				416	152	650		2382						108	1963	85		4137							

¹The plants in this table are the only operating WTP greater than 0.1mgd in Florida with available feed water quality data, according to Reiss Environmental (2003)
Blanks means no reported data in database

Exhibit B-1. Calculations to determine pipeline sizes and pump stations

Input Parameters					Constants	
Flow Velocity	V	3.5	fps		Φ	4.73
Maximum Storage Time	t	6	hours		g	32.2
Roughness Coefficient	C	140	--			

Assumed Conveyance Distances				
Location	Description	Distance [miles]		
		onshore	offshore	total
Flagler County	I-10 to outfall	4.6	3.46	8.06
Port Canaveral	assumed location to outfall	0.75	3.58	4.33
Satellite Beach	Wickham Rd./Pineda Cswy	6.1	3.49	9.59
Vero Beach	WWTP to outfall	4.5	4.57	9.07

Loss	Type
1	45deg
2	90deg
3	90deg (long)
4	check valve
5	gate valve

Pipe Segment	Calculation of Pipe Size, Tank Size, and Head Loss (Hazen-Williams) $h_L = [\Phi L / (C^{1.85} D^{1.85})] Q^{1.85}$												Calculation of Minor Losses in Pipeline ($K \cdot V^2 / 2g$)						Calculation of Losses in Diffuser Manifold System						Total Head Loss [ft]	Pump Selection			Manifold Diameter [in]			
	Location	Pipe Length [miles]	Flow Q			Area A [ft ²]	Diameter D [in]	Area A [ft ²]	Tank size [gal]	actual Velocity [fps]	Head Loss [ft]	Loss K	1	2	3	4	5	Head Loss [ft]	Port Size [in]	# of Ports	Port Area [ft ²]	Ratio ¹	Manifold Length [ft]	Friction Head Loss [ft]		Port Vel. [fps]	Estimated Head Loss in Lateral ² (approx.)	Total [ft]		Total Head Loss [ft]	Requ. Head [ft]	Quantity
Flagler County	8.06	500,000	347	0.774	0.221	6.366	12	0.79	125,000	1.0	13.40		27	3	0	2	7	0.19	2	3	0.022	0.08	180	0.0567	11.82	6.51	6.565	20.16	0.16			
	8.06	2,000,000	1,389	3.094	0.884	12.732	16	1.40	500,000	2.2	42.92		27	3	0	2	7	0.94	4	3	0.087	0.19	180	0.1815	11.82	6.51	6.69	50.55	30.55			
	8.06	5,000,000	3,472	7.736	2.210	20.131	20	2.18	1,250,000	3.5	78.86		27	3	0	2	7	2.41	4	8	0.087	0.32	480	0.8895	11.08	15.25	16.14	97.42	77.42	3	210	12
	8.06	15,000,000	10,417	23.208	6.631	34.868	36	7.07	3,750,000	3.3	34.38		27	3	0	2	7	2.07	6	11	0.196	0.31	660	0.5333	10.75	19.72	20.26	56.71	36.71			
	8.06	30,000,000	20,833	46.417	13.262	49.311	42	9.62	7,500,000	4.8	58.51		27	3	0	2	7	4.46	8	13	0.349	0.47	780	1.0724	10.23	21.12	22.19	85.17	65.17	4	680	21
Port Canaveral	4.33	500,000	347	0.774	0.221	6.366	12	0.79	125,000	1.0	7.20		6	2	0	2	3	0.11	2	3	0.022	0.08	180	0.0567	11.82	6.51	6.565	13.88	8.88			
	4.33	2,000,000	1,389	3.094	0.884	12.732	16	1.40	500,000	2.2	23.06		6	2	0	2	3	0.55	4	3	0.087	0.19	180	0.1815	11.82	6.51	6.69	30.30	25.30			
	4.33	5,000,000	3,472	7.736	2.210	20.131	20	2.18	1,250,000	3.5	42.37		6	2	0	2	3	1.42	4	8	0.087	0.32	480	0.8895	11.08	15.25	16.14	59.92	54.92	3	135	12
	4.33	15,000,000	10,417	23.208	6.631	34.868	36	7.07	3,750,000	3.3	18.47		6	2	0	2	3	1.21	6	11	0.196	0.31	660	0.5333	10.75	19.72	20.26	39.94	34.94			
	4.33	30,000,000	20,833	46.417	13.262	49.311	42	9.62	7,500,000	4.8	31.43		6	2	0	2	3	2.62	8	13	0.349	0.47	780	1.0724	10.23	21.12	22.19	56.25	51.25	3	510	25
Satellite Beach	9.59	500,000	347	0.774	0.221	6.366	12	0.79	125,000	1.0	15.95		26	4	0	2	9	0.19	2	3	0.022	0.08	180	0.0567	11.82	6.51	6.565	22.71	-2.29			
	9.59	2,000,000	1,389	3.094	0.884	12.732	16	1.40	500,000	2.2	51.06		26	4	0	2	9	0.97	4	3	0.087	0.19	180	0.1815	11.82	6.51	6.69	58.73	33.73			
	9.59	5,000,000	3,472	7.736	2.210	20.131	20	2.18	1,250,000	3.5	93.83		26	4	0	2	9	2.49	4	8	0.087	0.32	480	0.8895	11.08	15.25	16.14	112.46	87.46	3	264	12
	9.59	15,000,000	10,417	23.208	6.631	34.868	36	7.07	3,750,000	3.3	40.91		26	4	0	2	9	2.13	6	11	0.196	0.31	660	0.5333	10.75	19.72	20.26	63.30	38.30			
	9.59	30,000,000	20,833	46.417	13.262	49.311	42	9.62	7,500,000	4.8	69.62		26	4	0	2	9	4.61	8	13	0.349	0.47	780	1.0724	10.23	21.12	22.19	96.42	71.42	3	690	25
Vero Beach	9.07	500,000	347	0.774	0.221	6.366	12	0.79	125,000	1.0	15.08		30	2	6	2	7	0.21	2	3	0.022	0.08	180	0.0567	11.82	6.51	6.565	21.86	11.86			
	9.07	2,000,000	1,389	3.094	0.884	12.732	16	1.40	500,000	2.2	48.29		30	2	6	2	7	1.07	4	3	0.087	0.19	180	0.1815	11.82	6.51	6.69	56.05	46.05			
	9.07	5,000,000	3,472	7.736	2.210	20.131	20	2.18	1,250,000	3.5	88.74		30	2	6	2	7	2.74	4	8	0.087	0.32	480	0.8895	11.08	15.25	16.14	107.63	97.63	3	330	12
	9.07	15,000,000	10,417	23.208	6.631	34.868	36	7.07	3,750,000	3.3	38.69		30	2	6	2	7	2.35	6	11	0.196	0.31	660	0.5333	10.75	19.72	20.26	61.30	51.30			
	9.07	30,000,000	20,833	46.417	13.262	49.311	42	9.62	7,500,000	4.8	65.84		30	2	6	2	7	5.07	8	13	0.349	0.47	780	1.0724	10.23	21.12	22.19	93.11	83.11	3	750	25

¹ Ratio of total port area to pipeline area should be between 1/3 and 1/2.
² diffuser, pipe friction, junction losses
³ Assumed 100ft² per pump for an average of 3 pumps

Appendix C

Comparative Analysis of UM3 and DKHW Simulations

The input files generated with the Visual Plumes (VP) user interface can be used to run the initial dilution models inherent in VP with little or no modifications between sub-programs. There are two models in VP that can handle single as well as multi-port submerged discharges: UM3 and DKHW. UM3 is a three dimensional Lagrangian model that uses the projected-area-entrainment (PAE) hypothesis; the independent variable in this model is time. DKHW is also a three dimensional model, but it uses the Eulerian integral method to solve the equations of motion for plume trajectory, size, concentration, and temperature. In this model the independent variable is distance.

The evaluation of possible outfall scenarios as described in the modeling plan determined that sea water desalination plants can produce brine plumes with salinity levels of up to 60 psu. Such plumes have a much higher density than the receiving water, and are expected to be sinking plumes. DKHW presently does not support the direct computation of sinking plumes. One can use DKHW to estimate sinking plumes by placing the outfall at the surface and then invert the ambient profile characteristics. This would likely be confusing for general use and experience has shown that UM3 tends to estimate dilution a bit more conservatively. For this reason, UM3 was selected as model of choice for predicting concentrate ocean outfall plumes. However, to compare the two approaches and to validate the UM3 model, selective runs were repeated using the DKHW model. For this analysis, two sets of parameters were selected that represent conditions that might be encountered at a water treatment concentrate ocean outfall along the northeast coast of Florida.

TABLE 1
Parameters for Comparison of UM3 and DKHW Model Outputs

	Ambient Current [m/s]	Discharge Flow [mgd/port]	Concentrate Salinity [psu]	Results displayed in Figures
Set 1	0.05	1, 2	5, 30	1 to 4
Set 2	0.15	1, 2	30, 60	5 to 8

UM3 runs are shown in red; DKHW runs are shown in blue.

Set 1 focuses on differences in predicting buoyant and almost neutral plumes. Low, but not stagnant, ambient velocities were selected for this case to reduce the influence of current induced mixing on near field plume dilution. The parameters for Set 2 were selected to determine the performance of the DKHW model for scenarios involving sinking plumes (plumes with higher density than receiving water). The results of the model runs for Set 1 as described in Table 1 are shown in Figures 1 to 4 (UM3 runs are shown in red; DKHW runs are shown in blue).

Figure 1 shows that the DKHW model predicts higher initial dilution rates than UM3 for all flow/velocity combinations. At a distance of 22 ft from the source (a distance equivalent to

the square root of the port area, a distance of regulatory interest) dilution rates exceed ratios of 45:1. For low salinity plumes this development continues so that extremely high dilution factors are achieved within close proximity to the discharge port. However, more saline plumes (30 psu) display a discontinuity at around 20 ft followed by a much smaller increase in dilution factors. This discontinuity can be observed in almost all runs. A closer investigation of the influence of salinity on simulation output for the DKHW model will be provided later in this section.

The predicted rise of effluent plumes differs significantly between both models. UM3 predicts trapped plumes for almost every scenario, even for low density plumes that were expected to rise to the surface (Figure 2). The only scenario for which UM3 predicts a surfacing plume is a combination of low salinity low velocity plumes with low velocity ambient currents. The horizontal and vertical positions at time of trapping depend mainly on effluent discharge velocities and density relations between effluent and receiving water. Higher salinities cause trapping at deeper depths and higher discharge velocities carry the plume further away from the source.

For low salinities (5 psu) DKHW predicts that the effluent plume reaches the surface at distances between 35 and 45 ft horizontal distance from the discharge port. Higher salinity levels cause trapping of the plume below the surface. For identical scenarios DKHW predicts deeper trapping depths than UM3 (for highly saline effluents). The described difference in plume behavior depending on effluent salinity/density levels indicates that DKHW is much more sensitive to density changes than UM3.

In the previous comparison it has been determined that UM3 probably underestimates the buoyancy of the discharge plume for low salinity discharges. DKHW provides a wider range of results for rising plumes, but is not capable of directly simulating sinking plumes. Hence, DKHW might be more appropriate to predict low density plumes and UM3 for highly saline plumes.

The analysis of Set 2 delivered results that compared similar to Set 1. As seen before, initial dilutions (within 20 ft from the source) are higher for DKHW computations than for UM3 (Figure 5). Initial rising of the plume is dominated by discharge velocities and port angles; for rising plumes both models deliver similar near field results (Figure 6).

Figures 5 and 6 confirm that DKHW does not properly predict sinking plumes. For plumes with salinities of 60 psu the DKHW model predicts rising plumes that reach the surface and extremely high initial dilution factors (more than 100:1). Although high salinity concentrates are discharged at an angle of 45° the jet momentum should not carry the plume all the way to the surface. Figure 6 also shows that the UM3 model fails to properly predict the development of sinking plumes under certain conditions. A plume trajectory as shown in Figures 6 and 7 would not occur under constant ambient conditions.

The influence of ambient current velocities on model outcomes seems to be higher for DKHW than for UM3. Under identical conditions the plume deviation caused by cross currents is much larger for DKHW model runs than for UM3 runs (Figure 7). The increased influence of current velocity would also explain the increased near field plume dilution in DKHW (Figure 5).

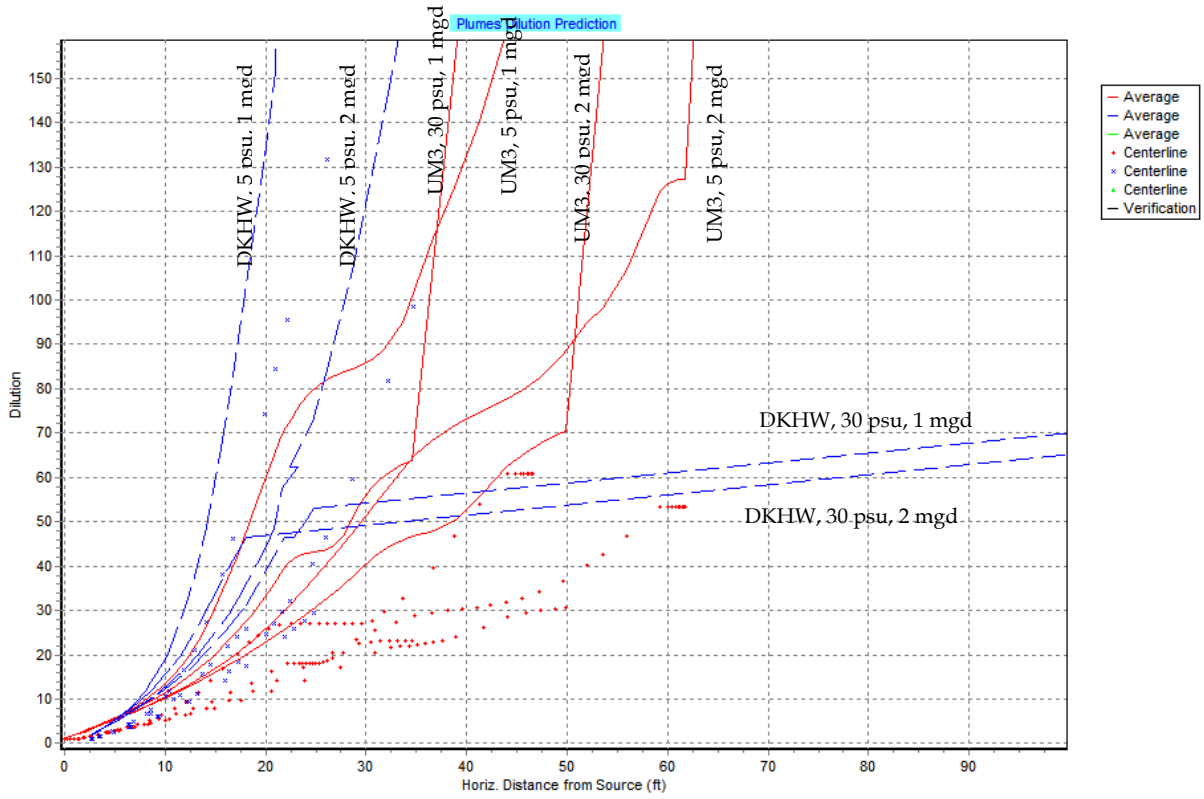


FIGURE 1. DILUTION VS. DISTANCE FOR SET 1

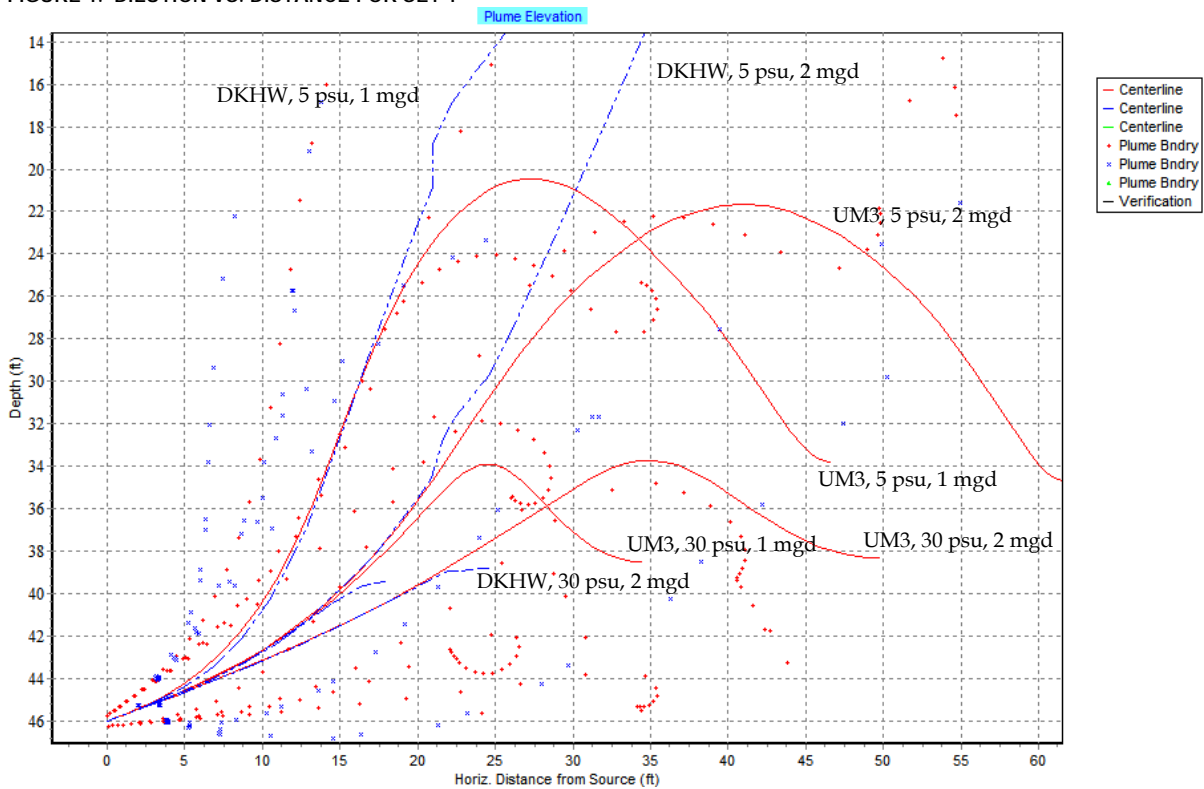


FIGURE 2. DEPTH VS. DISTANCE FOR SET 1

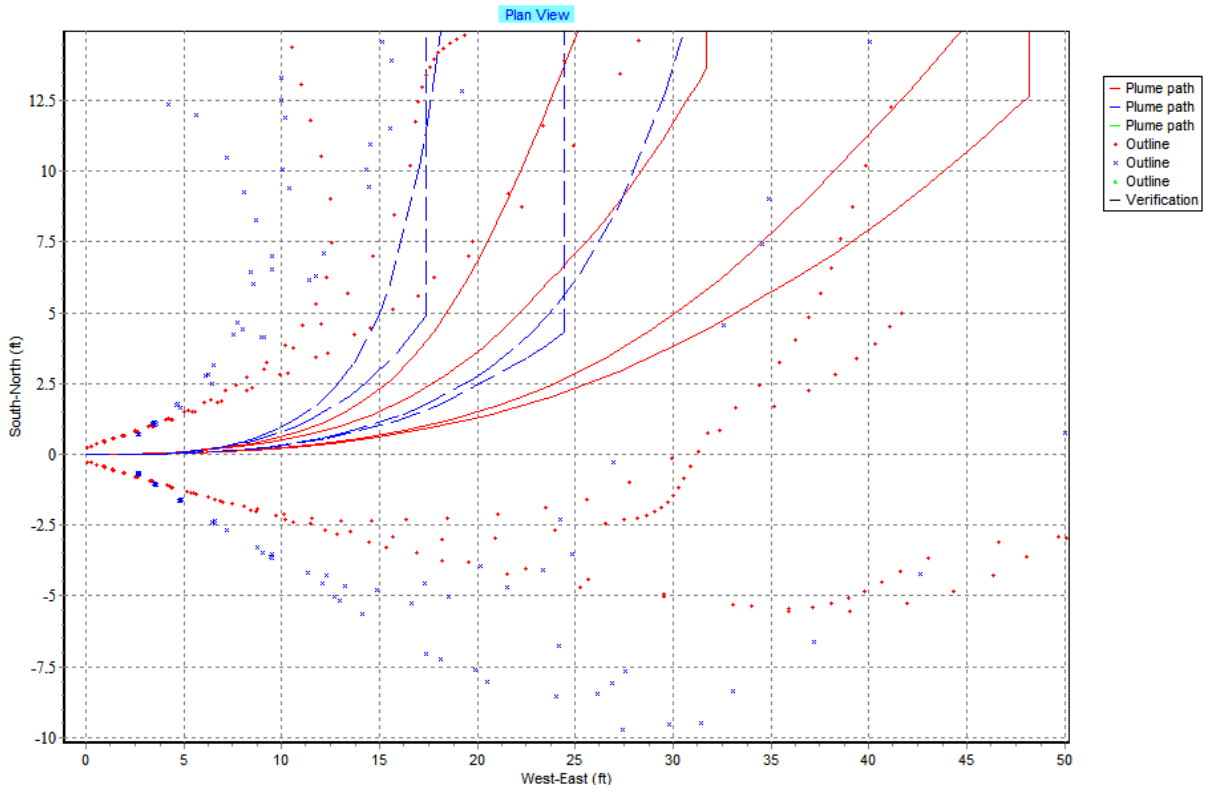


FIGURE 3. PLAN VIEW OF PLUME TRAJECTORY FOR SET 1

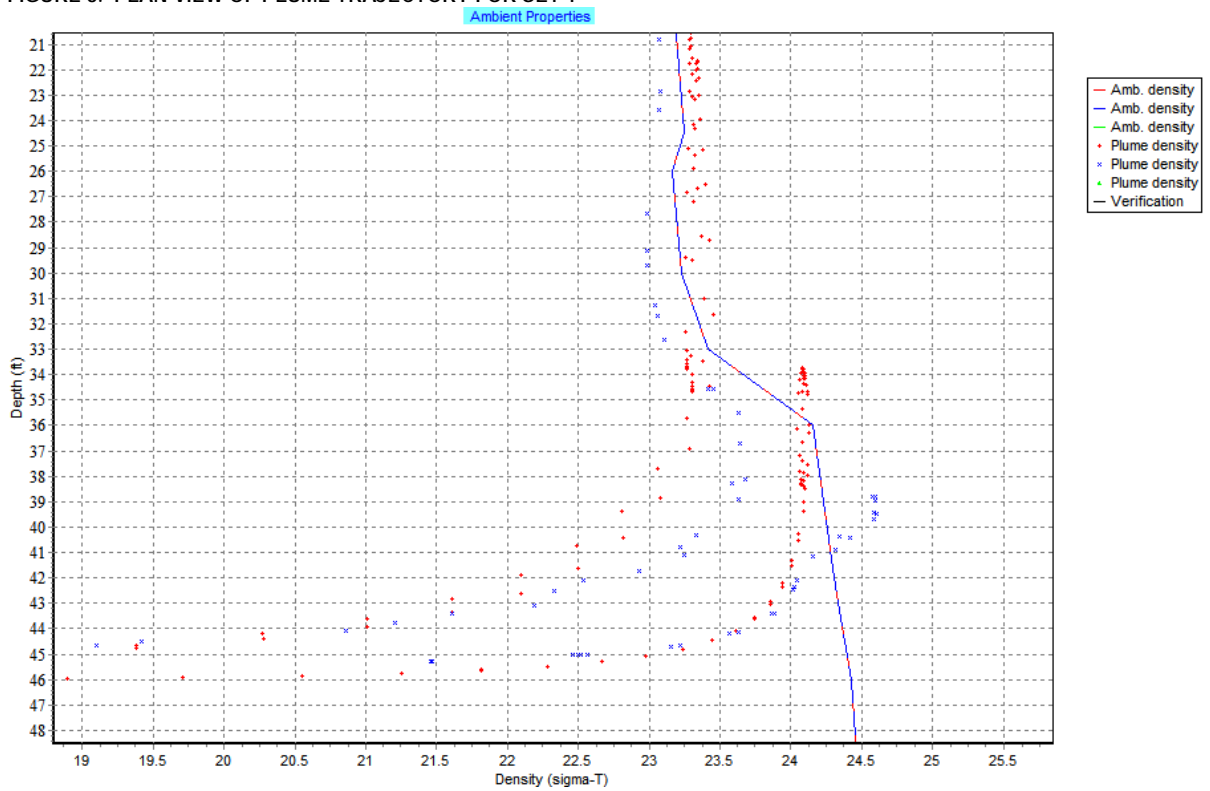


FIGURE 4. PLUME AND AMBIENT DENSITY FOR SET 1

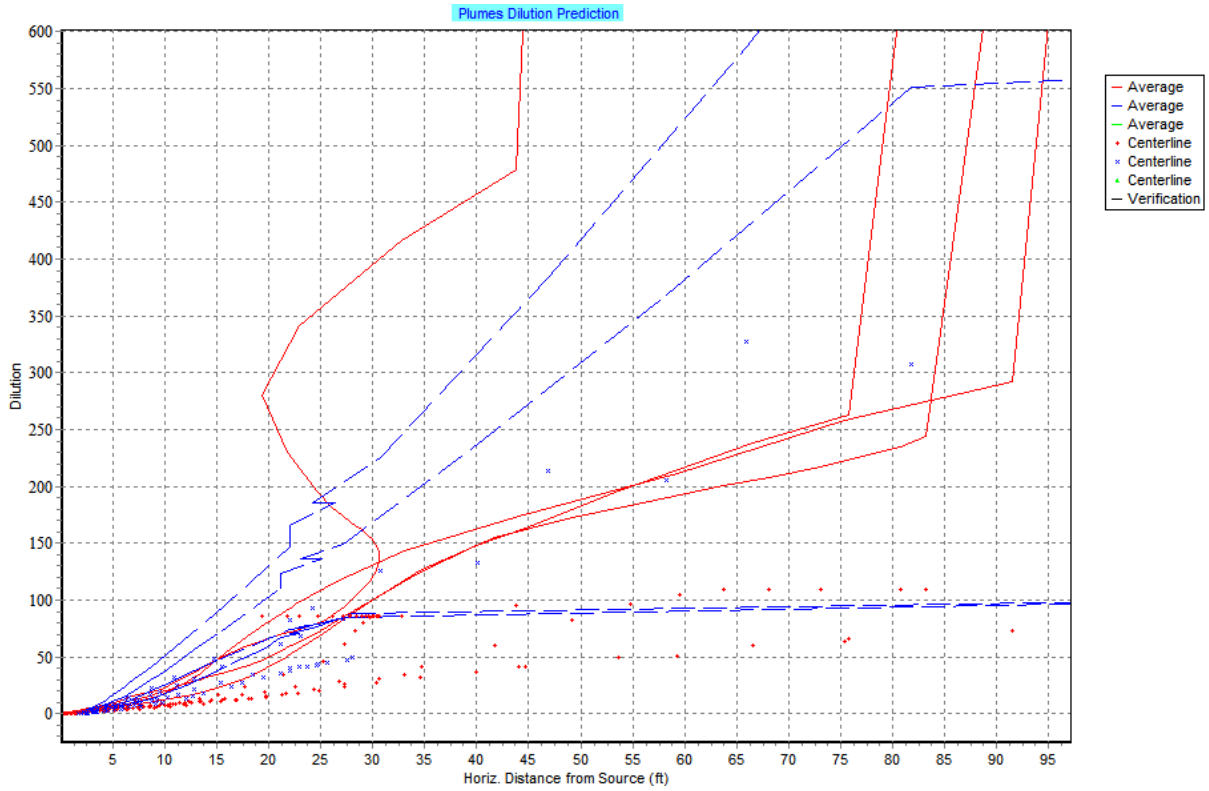


FIGURE 5. DILUTION VS. DISTANCE FOR SET 2

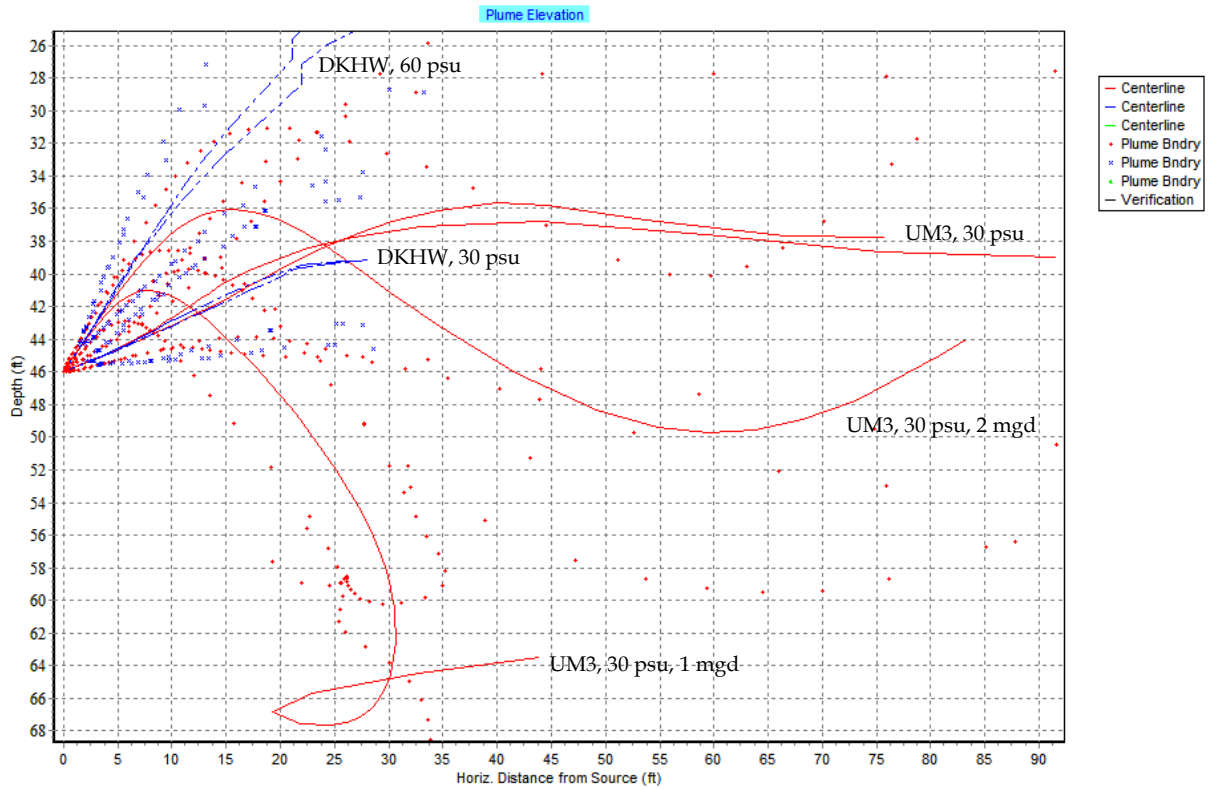


FIGURE 6. DEPTH VS. DISTANCE FOR SET 1

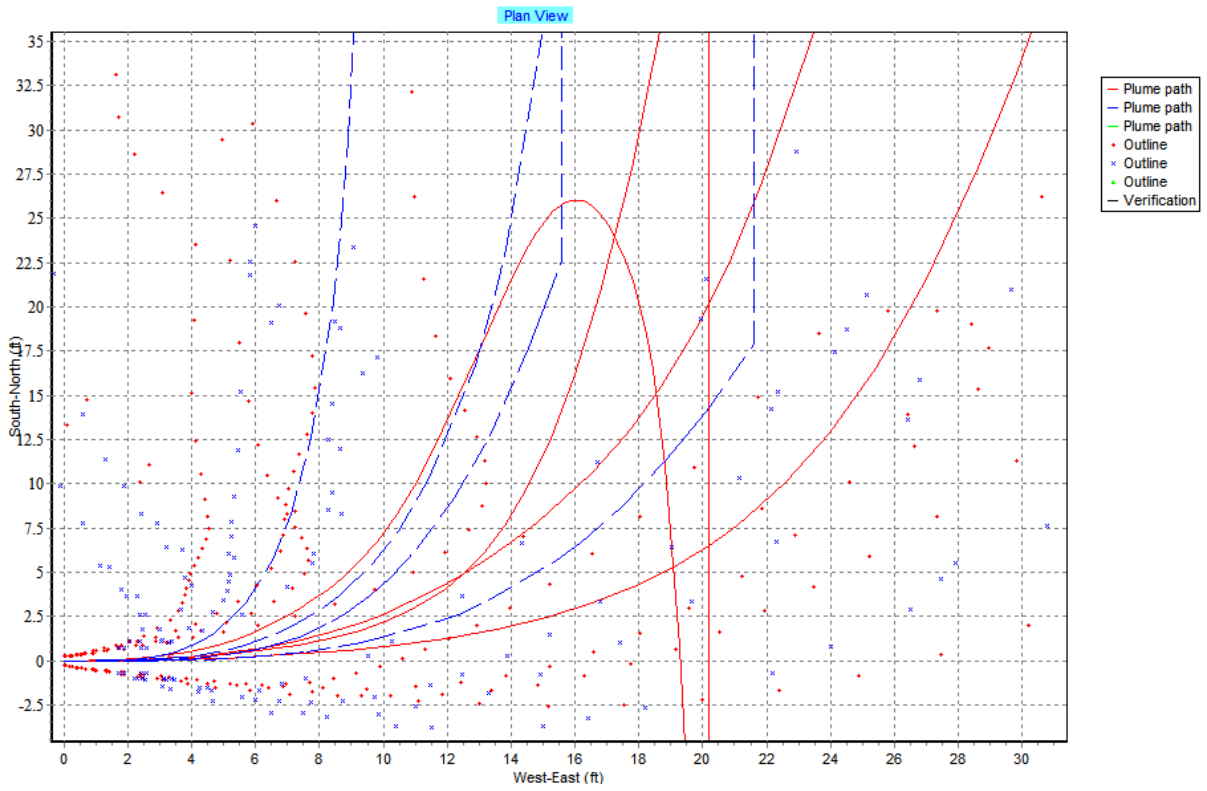


FIGURE 7. PLAN VIEW OF PLUME TRAJECTORY FOR SET 2

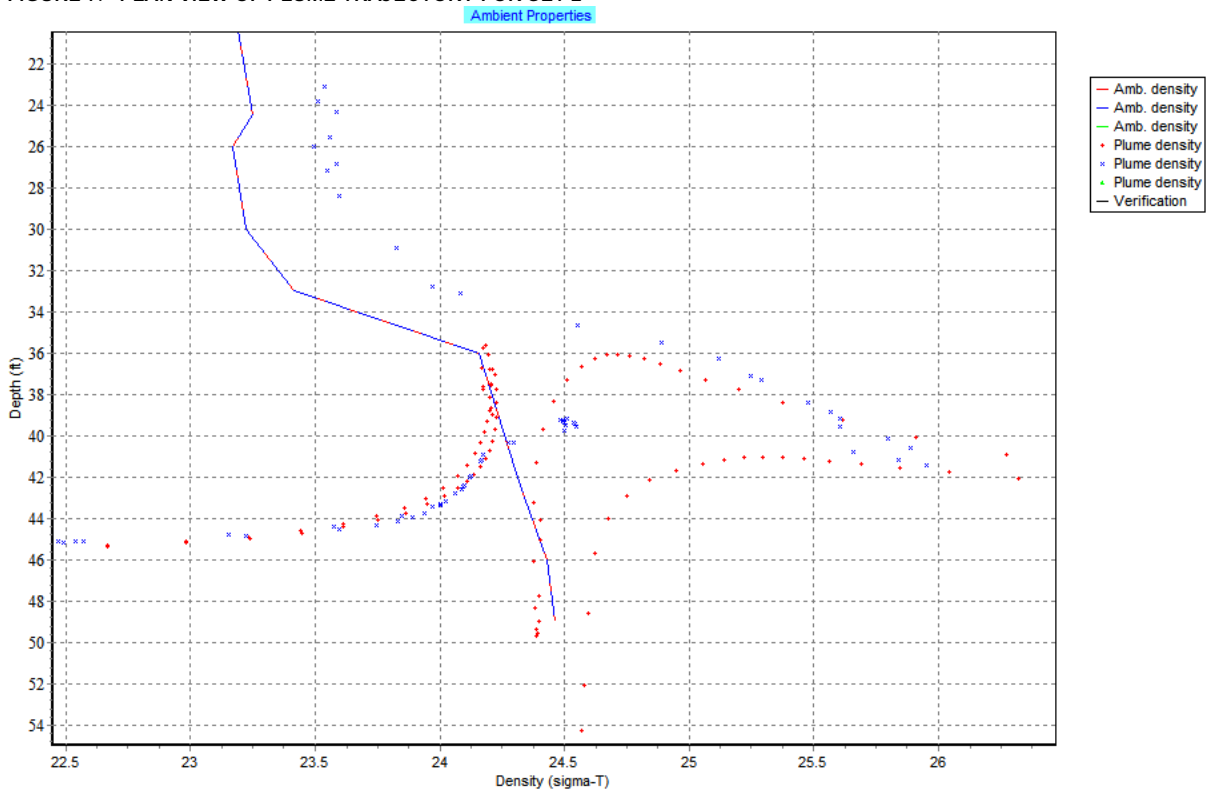


FIGURE 8. PLUME AND AMBIENT DENSITY FOR SET 2

The above analysis has shown that the UM3 model may underestimate the maximum rise of low salinity plumes, and DKHW is not capable of directly predicting high salinity plumes. To determine the response of DKHW to increasing salinity levels, a total of 6 scenarios were simulated as shown in Table 2. The results are presented in Figures 9 and 10.

TABLE 2
Test Input for Comparing DKHW for Various Salinities

Run #	Discharge Flow [MGD/Port]	Ambient Current Velocity [m/s]	Vertical Port Angle [°]	Discharge Salinity [psu]	Color in Figures 9 to 11
1	2	0.1	15	15	Red
2	2	0.1	15	20	Blue
3	2	0.1	15	25	Green
4	2	0.1	45	30	Red
5	2	0.1	45	35	Blue
6	2	0.1	45	40	Green

Near field dilution factors are presented in Figure 9. The vertical port angle was changed to 45° for plumes with salinity levels of 30 psu and higher, corresponding to the assumptions made in the modeling plan. The division in two sets of curves is caused by this change in port angle after the third run. At a discharge angle of 45° the plume rises as a result of the induced jet momentum rather than buoyancy. This initial rise transports the plume into areas of higher current velocities (Figure 12) and higher mixing potentials. As a result, plumes discharged at 45° mix faster (Figure 9), rise faster (Figure 10), and deviate stronger towards the dominant current direction (Figure 11). However, this effect is only temporary; after dissipation of the jet momentum the determining factors for plume dilution are salinity gradient and ambient current velocity.

Figure 10 shows that for salinity concentrations between 15 and 35 psu all plumes rise before being trapped at levels of 24 ft or more below the surface. Only run 6 (40 psu) continues to rise until it reaches the surface. At 40 psu salinity the plume is slightly denser than the receiving water (temperatures of concentrate and receiving water are similar) and should be trapped or even sink after the jet momentum is dissipated. This shows that the applicability of DKHW model results is limited to buoyant plumes.

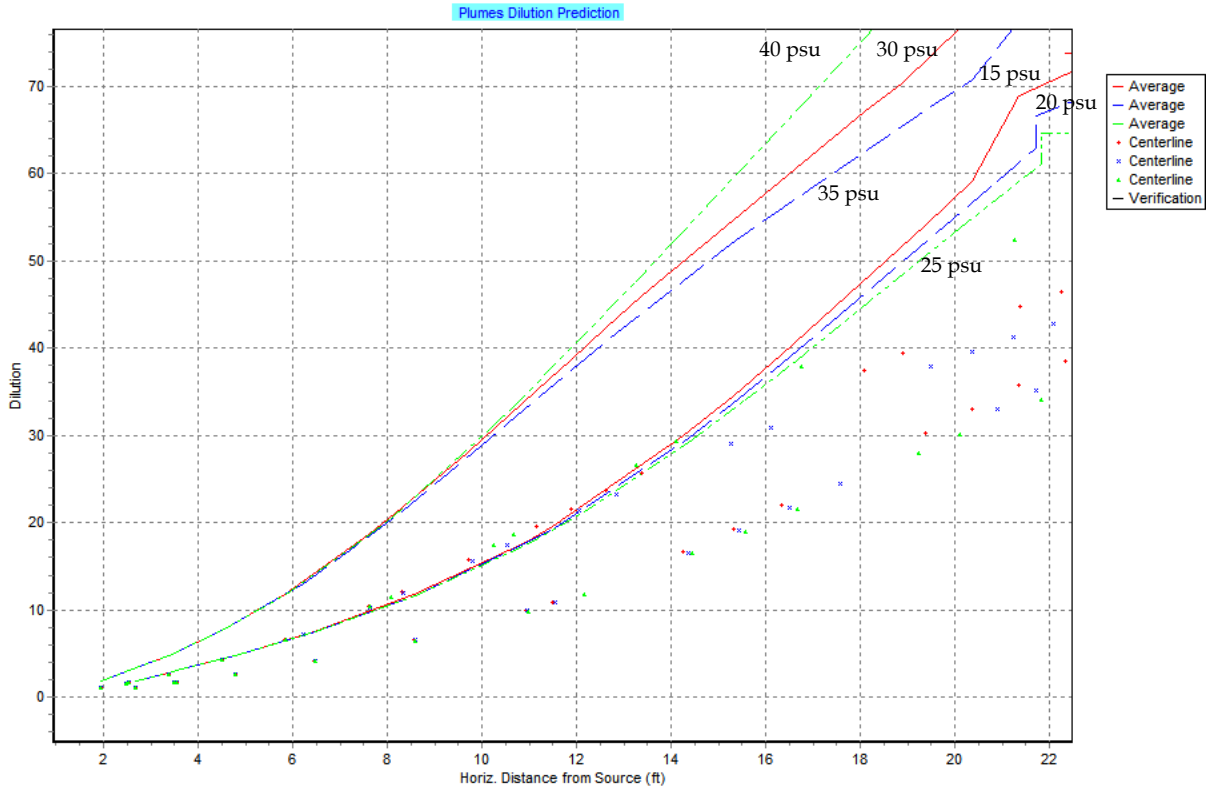


FIGURE 9. DILUTION VS. DISTANCE DKHW RESULTS (TABLE 2 INPUT)

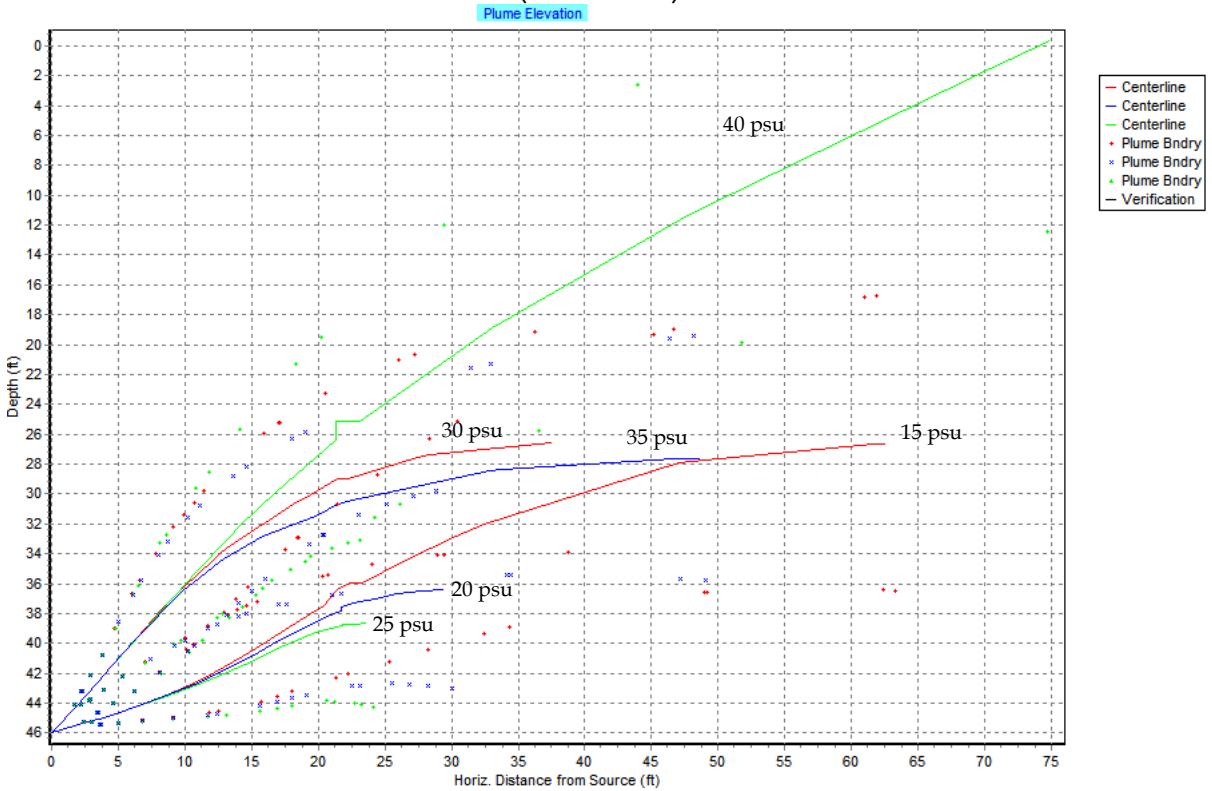


FIGURE 10. DEPTH VS. DISTANCE DKHW RESULTS (TABLE 2 INPUT)

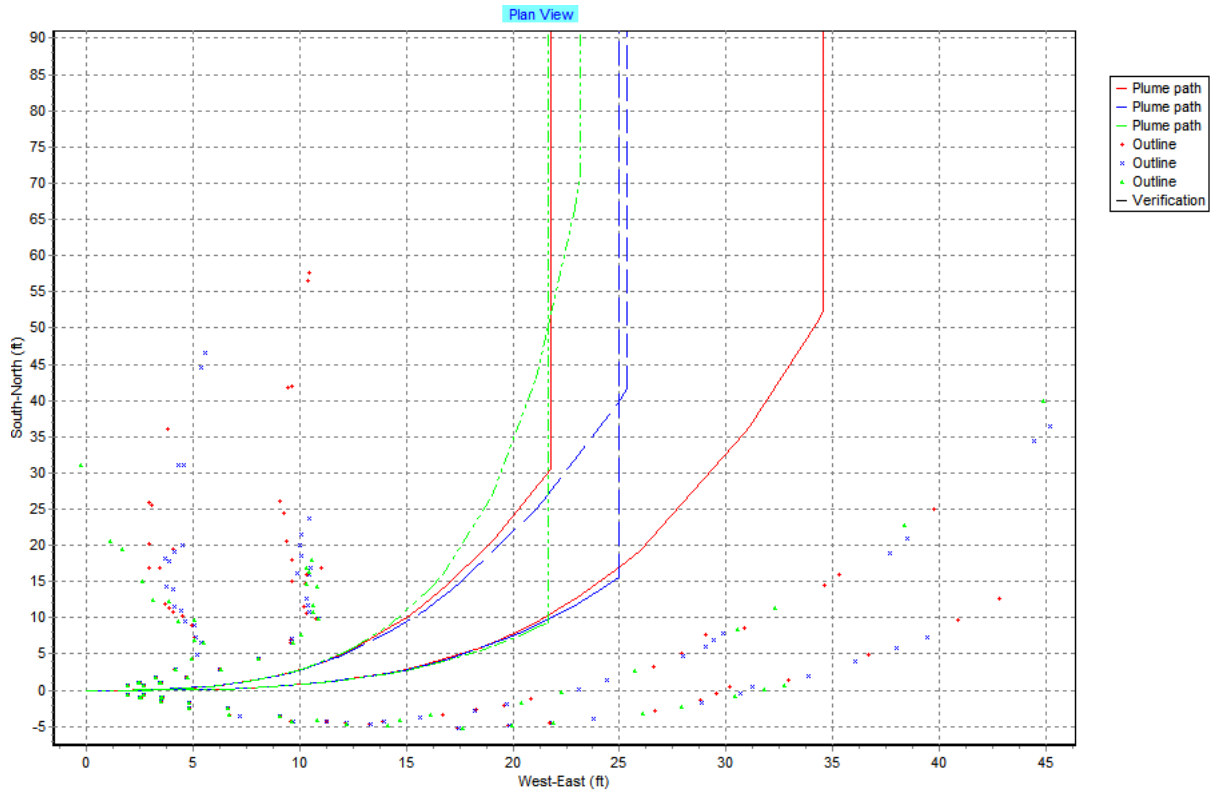


FIGURE 11. PLAN VIEW OF PLUME TRAJECTORY DKHW (TABLE 2 INPUT)

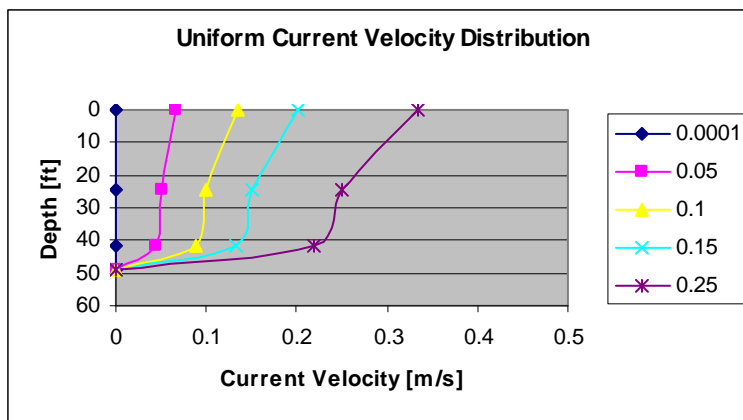
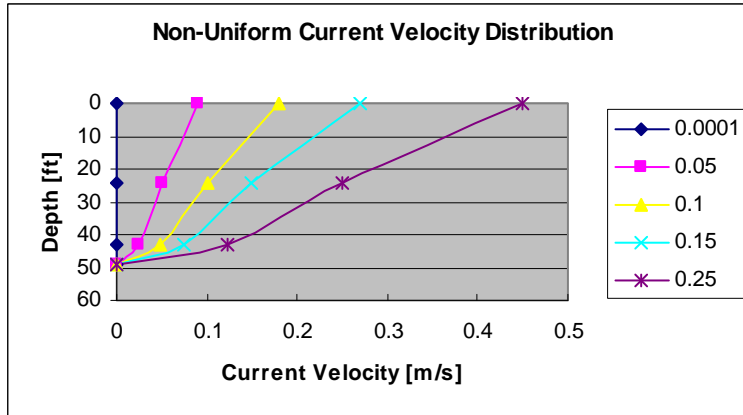


FIGURE 12. VELOCITY DISTRIBUTIONS FOR A DEPTH OF 49 FT

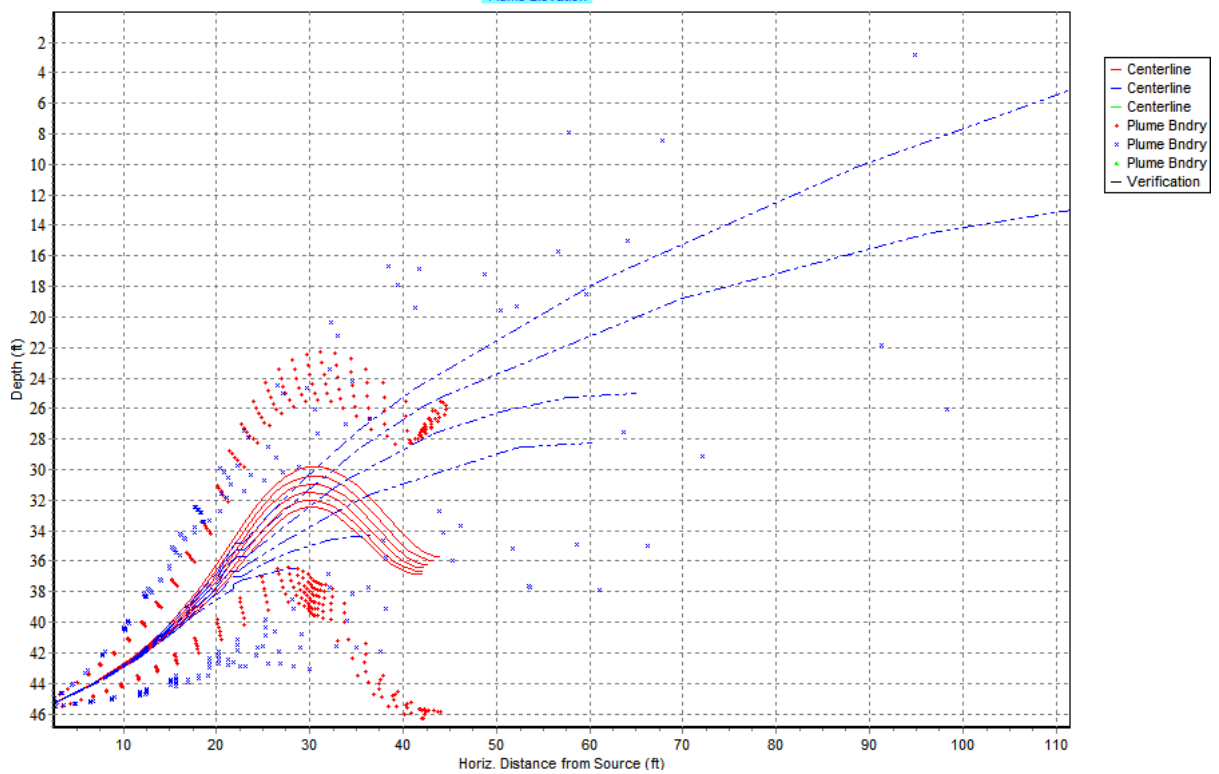
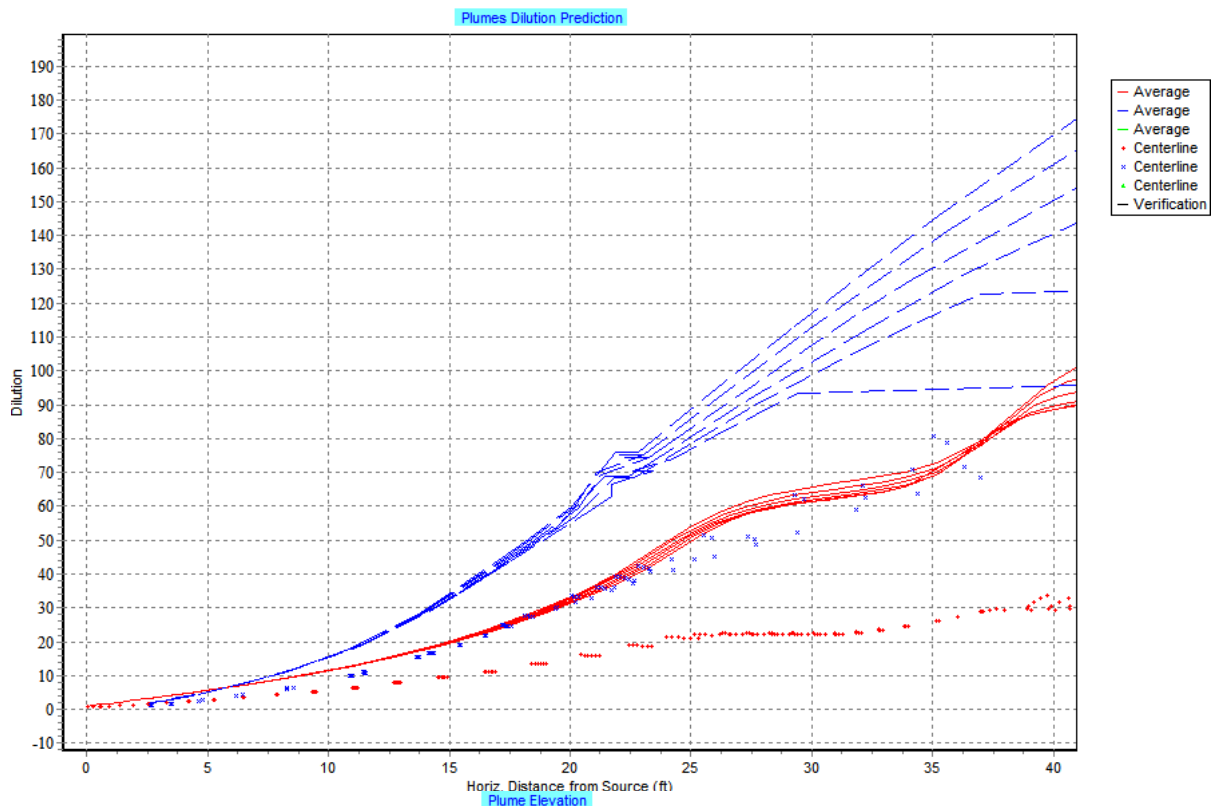
Additional Runs to Investigate the Influence of Salinity Variations

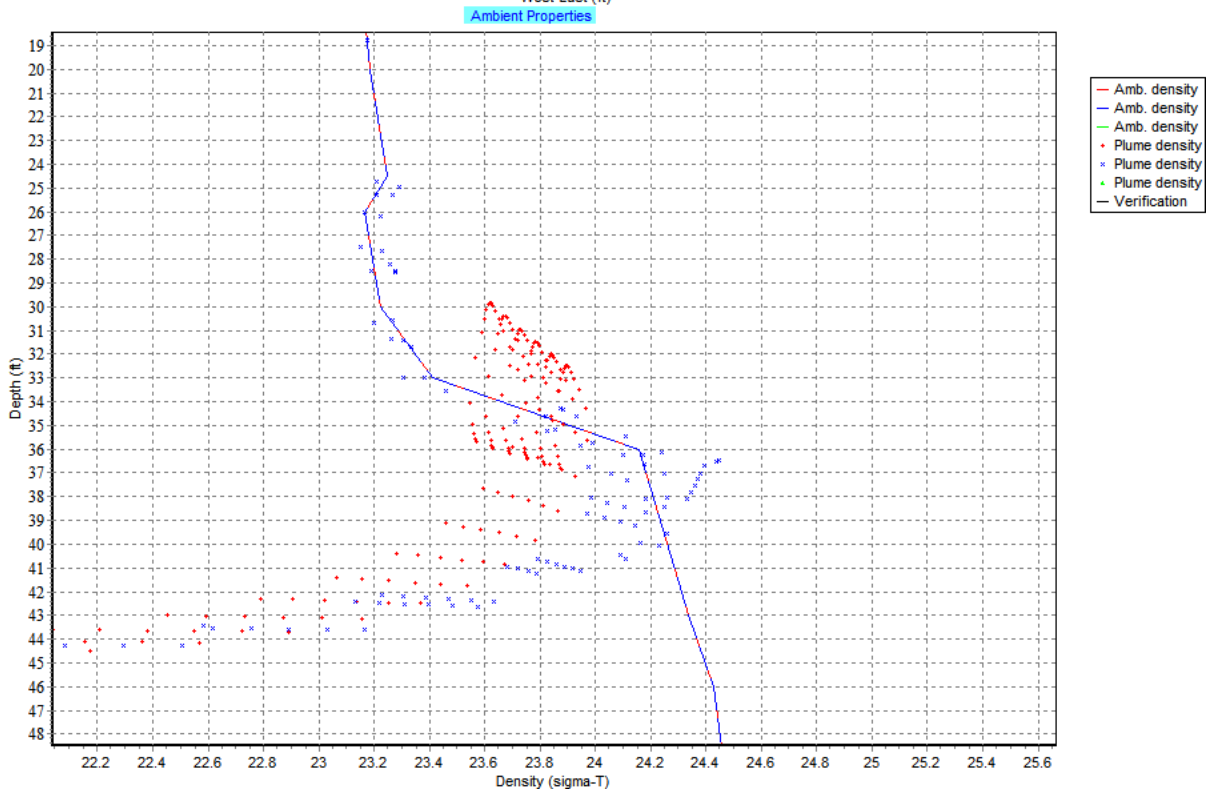
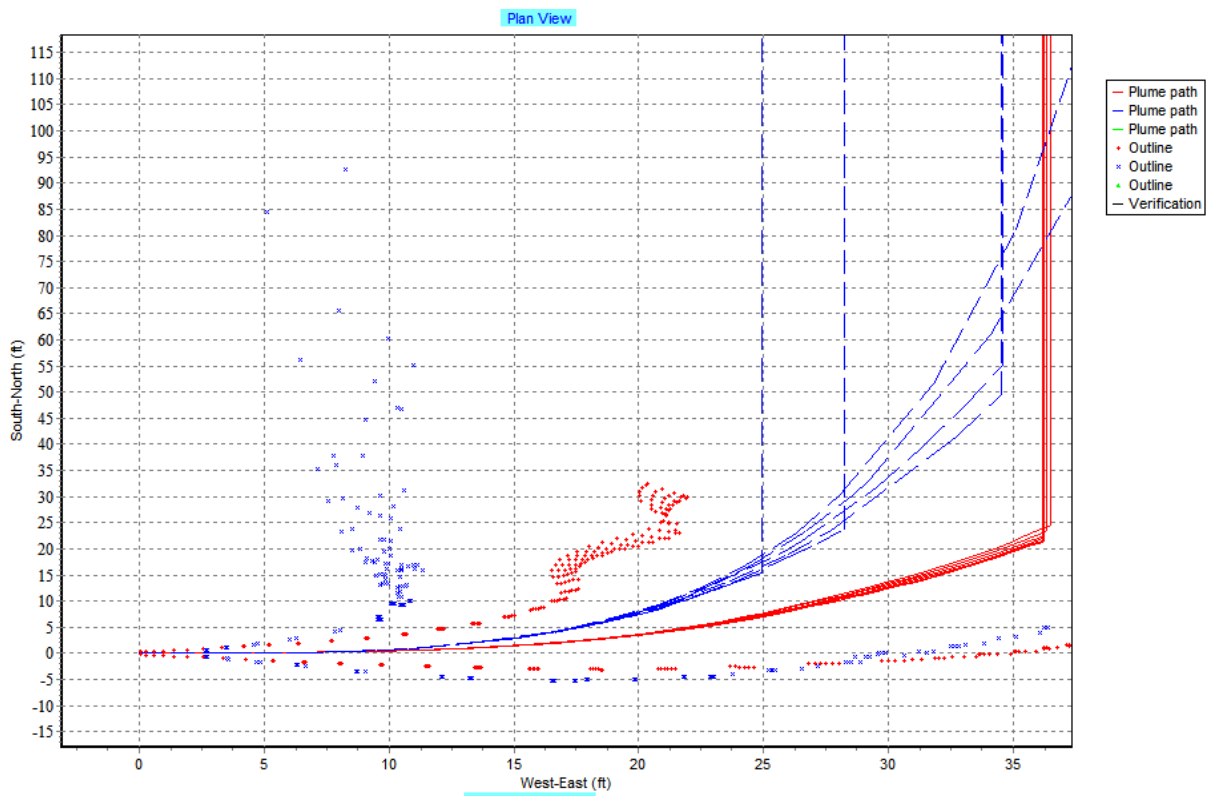
The results shown in the following figures show that UM3 computes lower dilution rates for the various salinities.

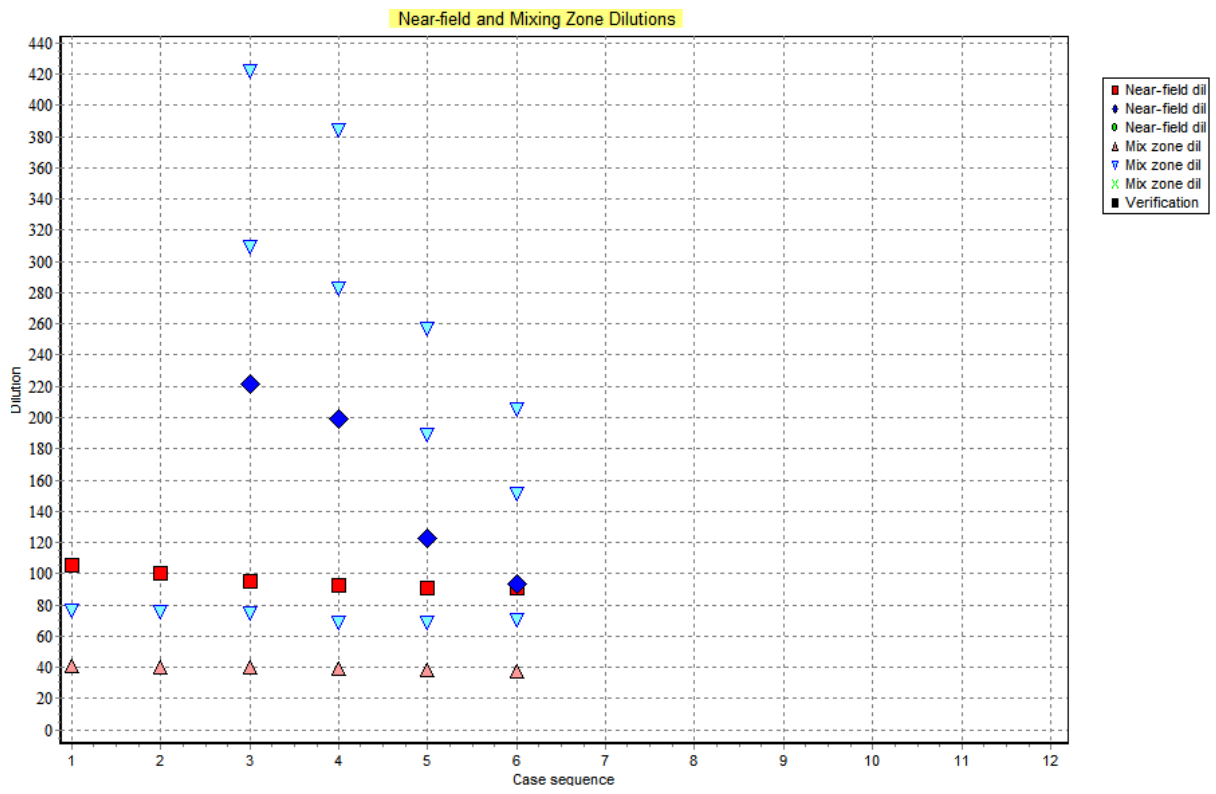
TABLE A

Run #	Discharge Flow [MGD/Port]	Ambient Current Velocity [m/s]	Vertical Port Angle [°]	Discharge Salinity [psu]
1	2	0.1	15	10
2	2	0.1	15	12
3	2	0.1	15	14
4	2	0.1	15	16
5	2	0.1	15	18
6	2	0.1	15	20

UM3 runs are shown in red; DKHW runs are shown in blue.







Appendix D-1: Outfall Locations

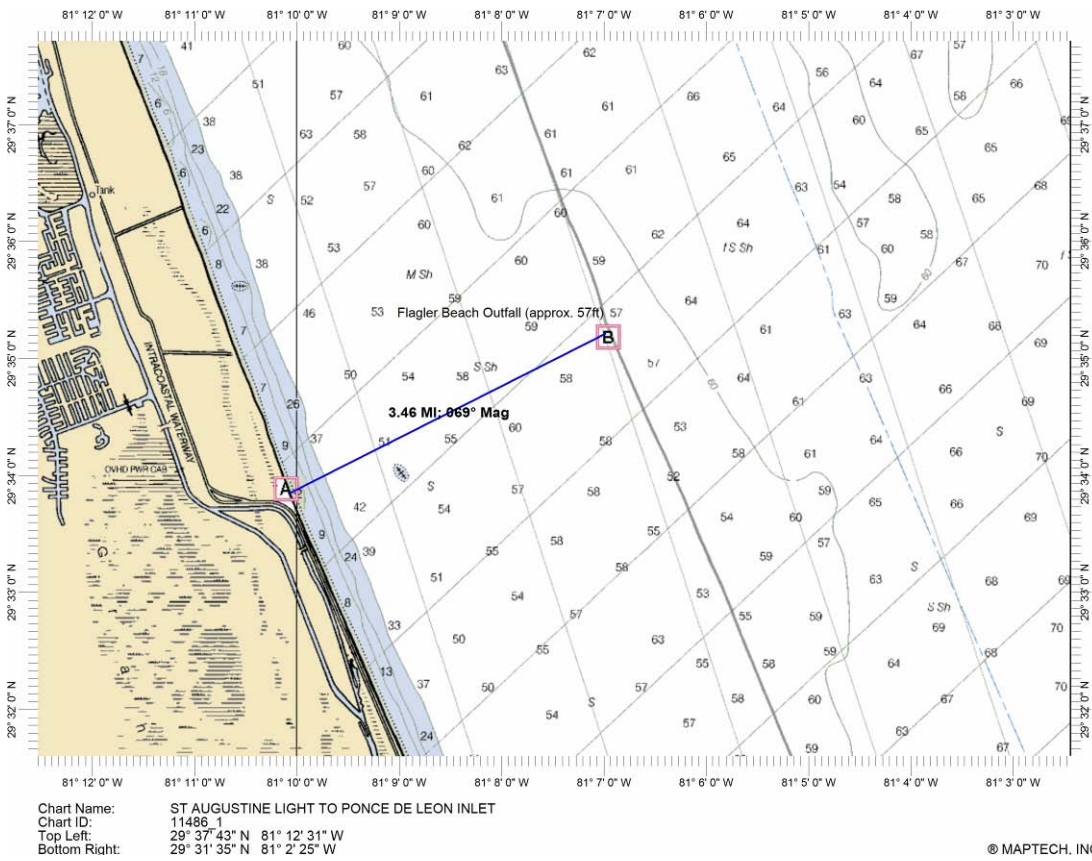


FIGURE D-1-1
 Potential Location for an Ocean Outfall in Flagler County Area, Used for Information Collection

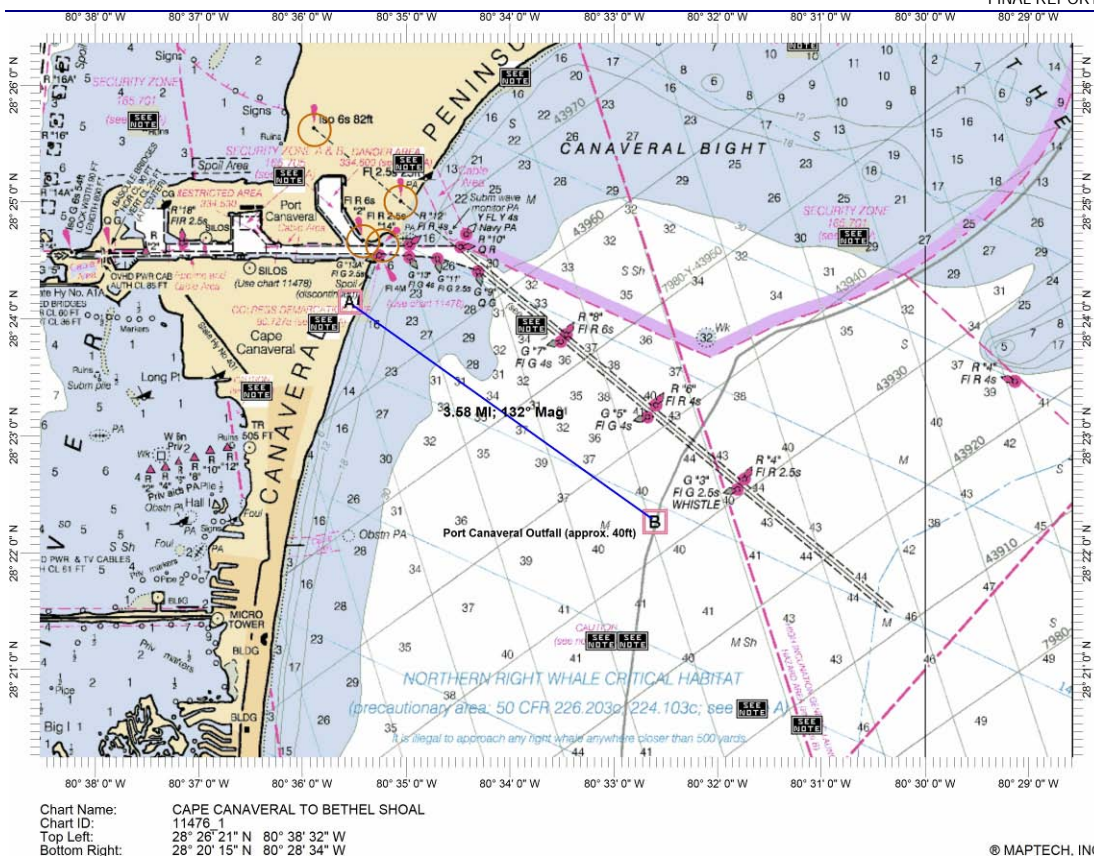


FIGURE D-1-2
 Potential Location of an Ocean Outfall in the Port Canaveral Area, Used for Information Collection

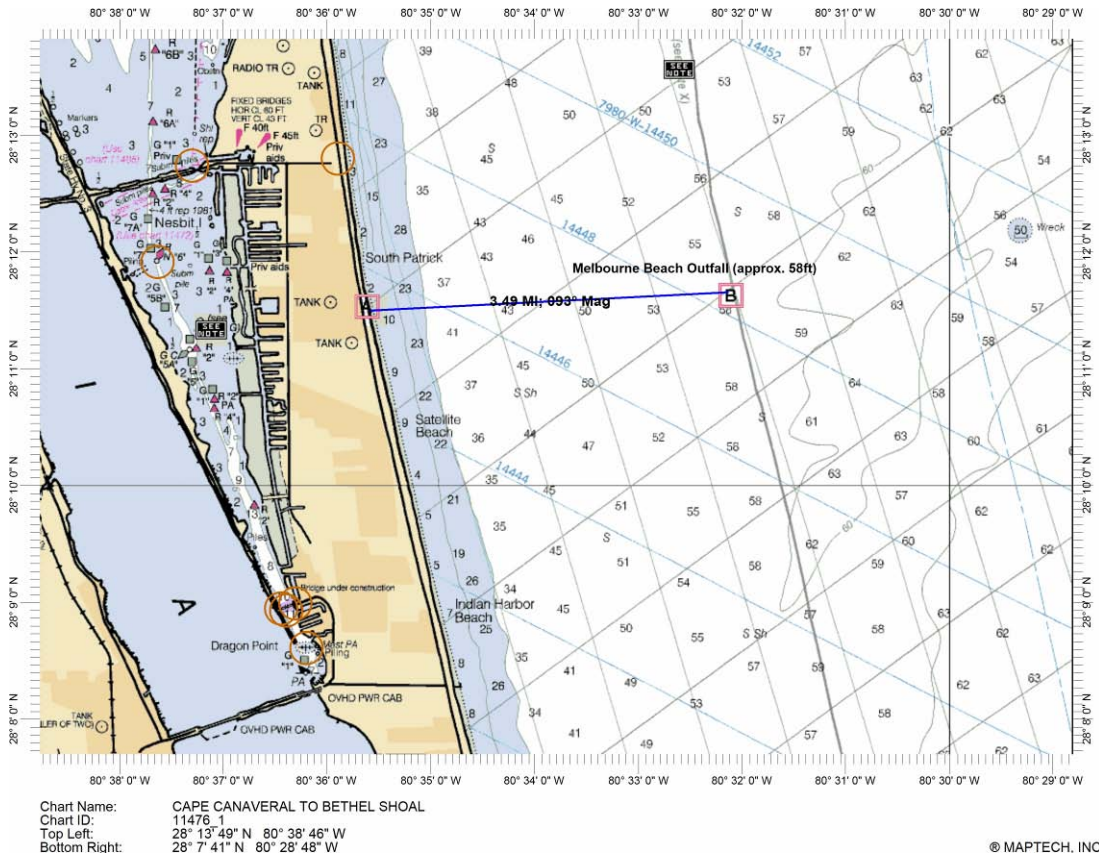


FIGURE D-1-3
 Potential Location for an Ocean Outfall in the Melbourne Beach Area, Used for Information Collection

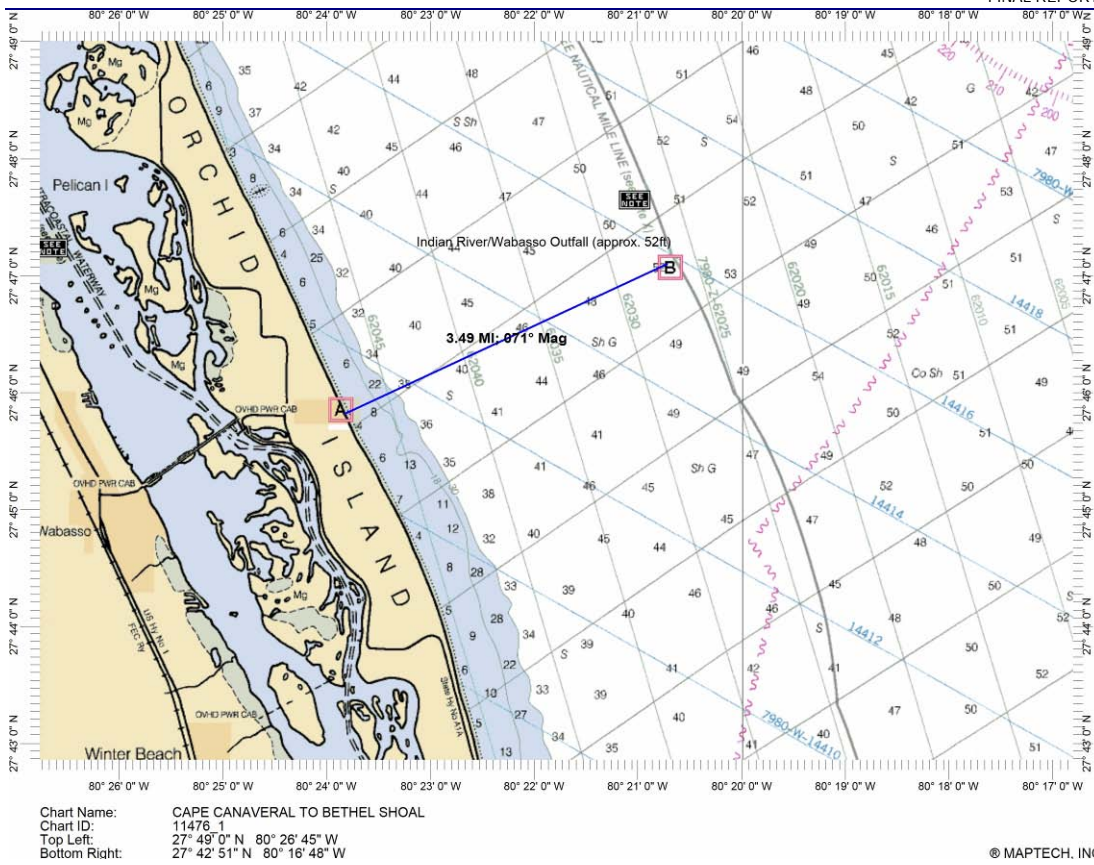


FIGURE D-14
 Potential Location for an Ocean Outfall in the Wabasso Area, Used for Information Collection

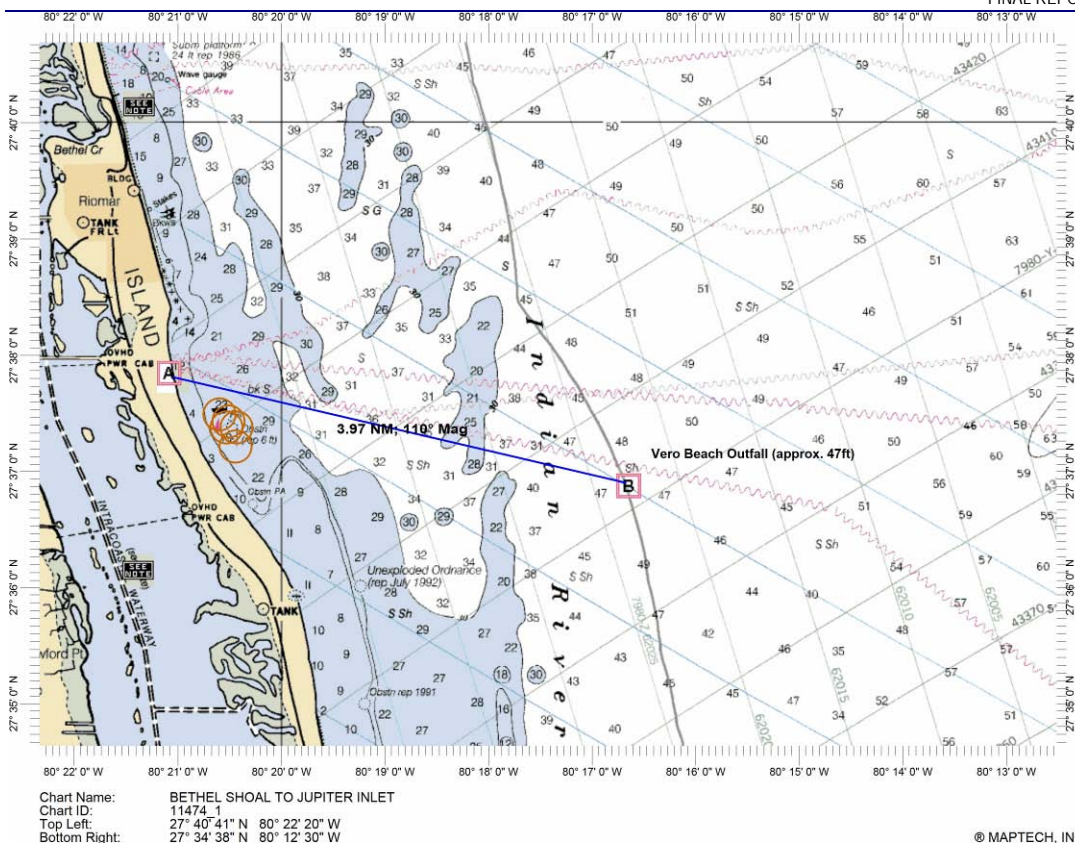


FIGURE D-1-5
Potential Location for an Ocean Outfall in the Vero Beach Area, Used for Information Collection

Appendix D-2: Geographic Distribution of Stations and recorded Temperature and Salinity

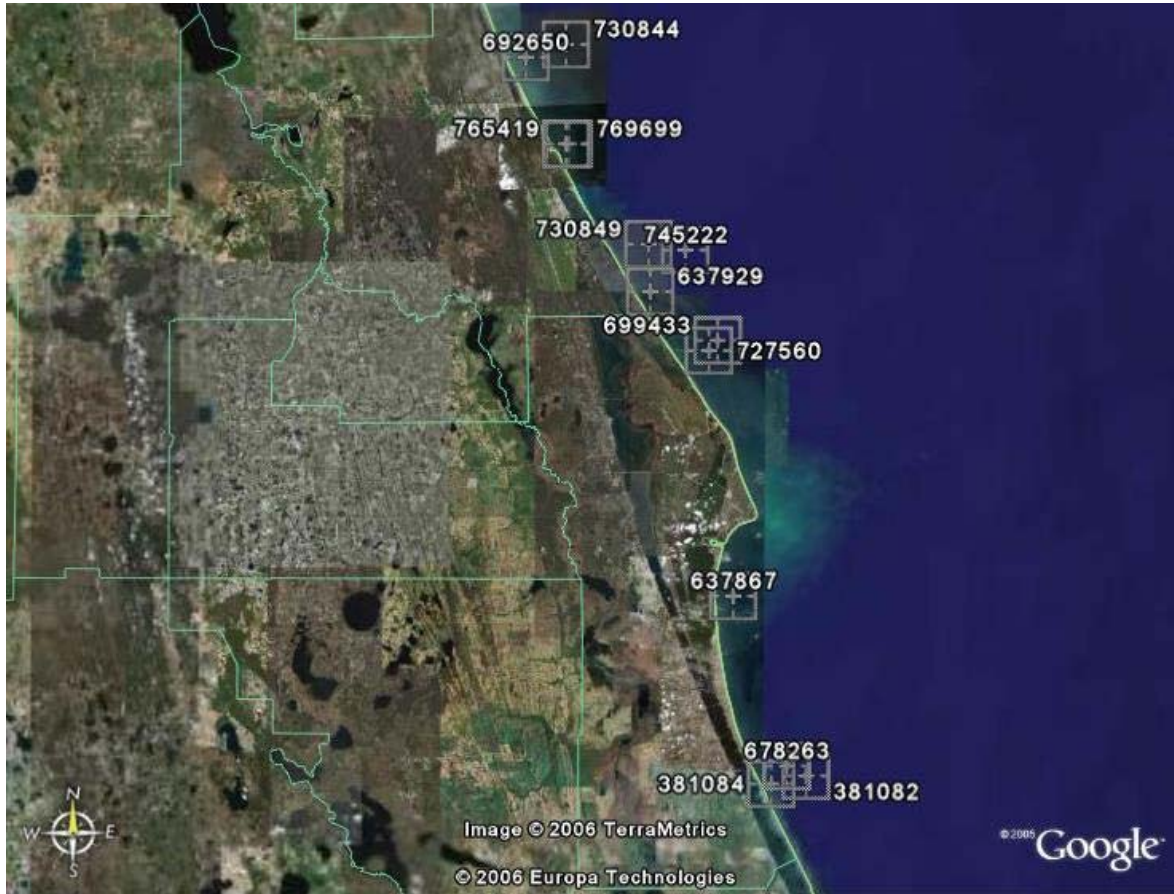


FIGURE D-2-1
Location of NOAA stations for available ocean data

#-----			
STATION	381084	WOD Unique Station Number	WOD code
Latitude	28	decimal degrees	
Longitude	-80.5	decimal degrees	
Year	1962		
Month	8		
Day	23		
Bottom depth	14	meters	
Wind Direction	14	WMO code 0877	135 DEGREES - 144 DEGREES
Wind speed	12	knots	
VARIABLES	Depth	Temperature	Salinity
UNITS	m	degrees C	PSS
	0	28.7	36.36
	1	28.7	36.36
	3	28.7	36.36
	4	28.4	36.44
	6	27.5	36.45
	7	26.96	36.49
	9	26.75	36.49
	10	26.58	36.49

12	26.25	36.47	
13	26.22	36.47	
14	26.22	36.45	
#-----			
STATION	381082	WOD Unique Station Number	WOD code
Latitude	28.013	decimal degrees	
Longitude	-80.433	decimal degrees	
Year	1962		
Month	8		
Day	23		
Bottom depth	16	meters	
Wind Direction	14	WMO code 0877	135 DEGREES - 144 DEGREES
Wind speed	12	knots	
VARIABLES	Depth	Temperature	Salinity
UNITS	m	degrees C	PSS
0	28.92	36.35	
1	28.92	36.35	
3	28.92	36.35	
4	28.91	36.35	
6	28.78	36.36	
7	28.63	36.38	
9	28.5	36.29	
10	28.13	36.38	
12	25.57	36.47	
13	25.33	36.42	
15	24.97	36.44	
#-----			
STATION	637867	WOD Unique Station Number	WOD code
Latitude	28.318	decimal degrees	
Longitude	-80.572	decimal degrees	
Year	1971		
Month	9		
Day	16		
Bottom depth	11	meters	
VARIABLES	Depth	Temperature	Salinity
UNITS	m	degrees C	PSS
0	---	36.1	
3	27.6	35.98	
7	27.1	35.98	
#-----			
STATION	637929	WOD Unique Station Number	WOD code
Latitude	28.833	decimal degrees	
Longitude	-80.73	decimal degrees	
Year	1971		
Month	9		
Day	17		
Bottom depth	15	meters	
VARIABLES	Depth	Temperature	Salinity
UNITS	m	degrees C	PSS
0	---	34.9	
3	27.9	34.93	
11	27	35.97	
#-----			
STATION	678263	WOD Unique Station Number	WOD code

Latitude	28.03	decimal degrees		
Longitude	-80.47	decimal degrees		
Year	1973			
Month	3			
Day	22			
Bottom depth	15	meters		
Wind Direction	34	WMO code 0877		335 DEGREES - 344 DEGREES
Wind speed	20	knots		
Air temperature (dry bulb)	20	degrees Celsius		
Air temperature (wet bulb)	16.7	degrees Celsius		
Cloud type	8	WMO code 500		CUMULUS (CU)
Cloud cover	5	WMO code 2700		5 OKTAS 6/10
VARIABLES	Depth	Temperature	Salinity	
UNITS	m	degrees C	PSS	
	0	20.8		36.221
	10	20.82		36.218
#-----				
STATION	692650	WOD Unique Station Number		WOD code
Latitude	29.23	decimal degrees		
Longitude	-80.97	decimal degrees		
Year	1973			
Month	11			
Day	2			
Bottom depth	15	meters		
Sea State	1	WMO code 3700		CALM-RIPPLED 0-1/3 FT (0-.1METERS)
Wind Direction	2	WMO code 0877		15 DEGREES - 24 DEGREES
Wind speed	5	knots		
Air temperature (dry bulb)	25.5	degrees Celsius		
Air temperature (wet bulb)	22	degrees Celsius		
Cloud cover	0	WMO code 2700		0 (ZERO)
VARIABLES	Depth	Temperature	Salinity	
UNITS	m	degrees C	PSS	
	0	24.5		34.64
	12	23.38		34.624
#-----				
STATION	699433	WOD Unique Station Number		WOD code
Latitude	28.75	decimal degrees		
Longitude	-80.6	decimal degrees		
Year	1974			
Month	4			
Day	9			
Bottom depth	15	meters		
Sea State	2	WMO code 3700		SMOOTH-WAVELET 1/3-1 2/3 FT (.1-.5 METERS)
Wind Direction	29	WMO code 0877		285 DEGREES - 294 DEGREES
Wind speed	12	knots		
Air temperature (dry bulb)	22	degrees Celsius		
Air temperature (wet bulb)	20	degrees Celsius		
Weather condition	-1	WMO Code 4501		PARTLY CLOUDY (SCATTERED OR BROKED)
VARIABLES	Depth	Temperature	Salinity	
UNITS	m	degrees C	PSS	

	0	21.36		36.259
	13	21.2		36.248
#-----				
STATION		727560	WOD Unique Station Number	WOD code
Latitude		28.733	decimal degrees	
Longitude		-80.617	decimal degrees	
Year		1975		
Month		9		
Day		15		
Bottom depth		15	meters	
Sea State		3	WMO code 3700	SLIGHT 1 2/3 - 4 FT(.5-1.25 METERS)
Wind Direction		14	WMO code 0877	135 DEGREES - 144 DEGREES
Wind speed		12	knots	
Air temperature (dry bulb)		30.7	degrees Celsius	
Weather condition		-2	WMO Code 4501	CONTINUOUS LAYER(S) OF CLOUD(S)
VARIABLES	Depth	Temperature	Salinity	
UNITS	m	degrees C	PSS	
	0	28.08		36.075
	10	27.62		36.078
#-----				
STATION		730849	WOD Unique Station Number	WOD code
Latitude		28.913	decimal degrees	
Longitude		-80.733	decimal degrees	
Year		1976		
Month		1		
Day		31		
Bottom depth		16	meters	
Sea State		2	WMO code 3700	SMOOTH-WAVELET 1/3-1 2/3 FT (.1-.5 METERS)
Wind Direction		25	WMO code 0877	245 DEGREES - 254 DEGREES
Wind speed		10	knots	
Barometric pressure		1026.8	millibars	
Air temperature (dry bulb)		14.4	degrees Celsius	
Weather condition		-4	WMO Code 4501	FOG
VARIABLES	Depth	Temperature	Salinity	
UNITS	m	degrees C	PSS	
	0	16.28		35.505
	10	16.27		35.513
#-----				
STATION		745222	WOD Unique Station Number	WOD code
Latitude		28.903	decimal degrees	
Longitude		-80.662	decimal degrees	
Year		1977		
Month		2		
Day		20		
Bottom depth		14	meters	
Sea State		2	WMO code 3700	SMOOTH-WAVELET 1/3-1 2/3 FT (.1-.5 METERS)
Wind Direction		22	WMO code 0877	215 DEGREES - 224 DEGREES
Wind speed		10	knots	
Barometric pressure		1021.3	millibars	
Air temperature (dry bulb)		14.7	degrees Celsius	
Weather condition		-1	WMO Code 4501	PARTLY CLOUDY (SCATTERED OR BROKED)
VARIABLES	Depth	Temperature	Salinity	

UNITS	m	degrees C	PSS	
	0	12.56		34.28
	10	13.48		35.27
#-----				
#-----				
STATION		765419	WOD Unique Station Number	WOD code
Latitude		29.083	decimal degrees	
Longitude		-80.892	decimal degrees	
Year		1978		
Month		7		
Day		26		
Bottom depth		15	meters	
Wave direction		27	WMO code 0877	265 DEGREES - 274 DEGREES
Wave Height		3	WMO code 01555	1.5 METER
Wind Direction		29	WMO code 0877	285 DEGREES - 294 DEGREES
Barometric pressure		1015.8	millibars	
Air temperature (dry bulb)		26.7	degrees Celsius	
Weather condition		-1	WMO Code 4501	PARTLY CLOUDY (SCATTERED OR BROKED)
VARIABLES	Depth	Temperature	Salinity	
UNITS	m	degrees C	PSS	
	1	27.85		36.12
	2	27.85		36.12
	3	27.83		36.12
	4	27.83		36.12
	5	27.84		36.13
	6	27.84		36.13
	7	27.85		36.13
	8	27.85		36.13
	9	27.81		36.12
	10	27.77		36.11
	11	27.72		36.12
	12	27.65		36.13
	13	27.4		36.14
	14	27.07		36.16
#-----				
#-----				
STATION		769699	WOD Unique Station Number	WOD code
Latitude		29.083	decimal degrees	
Longitude		-80.887	decimal degrees	
Year		1978		
Month		11		
Day		10		
Bottom depth		20	meters	
Wave direction		32	WMO code 0877	315 DEGREES - 324 DEGREES
Wave Height		3	WMO code 01555	1.5 METER
Wind Direction		32	WMO code 0877	315 DEGREES - 324 DEGREES
Barometric pressure		1016.3	millibars	
Air temperature (dry bulb)		20.6	degrees Celsius	
Weather condition		-1	WMO Code 4501	PARTLY CLOUDY (SCATTERED OR BROKED)
VARIABLES	Depth	Temperature	Salinity	
UNITS	m	degrees C	PSS	
	2	22.27		34.68
	3	22.27		34.68
	4	22.27		34.69

5	22.28	34.7
6	22.28	34.7
7	22.29	34.71
8	22.3	34.73
9	22.32	34.8
10	22.35	34.85
11	22.35	34.93
12	22.24	35.05
13	22.31	35.21
14	22.42	35.41
15	22.37	35.52
16	22.36	35.55
17	22.36	35.54
18	22.35	35.54

#-----

STATION	730844	WOD Unique Station Number	WOD code
Latitude	29.252	decimal degrees	
Longitude	-80.892	decimal degrees	
Year	1976		
Month	1		
Day	31		
Bottom depth	16	meters	
Sea State	2	WMO code 3700	SMOOTH-WAVELET 1/3-1 2/3 FT (.1-.5 METERS)
Wind Direction	23	WMO code 0877	225 DEGREES - 234 DEGREES
Wind speed	6	knots	
Barometric pressure	1024.7	millibars	
Air temperature (dry bulb)	13	degrees Celsius	
Weather condition	-1	WMO Code 4501	PARTLY CLOUDY (SCATTERED OR BROKED)
VARIABLES	Depth	Temperature	Salinity
UNITS	m	degrees C	PSS

0	14.96	34.988
10	14.97	34.951

Appendix E – Density Calculated from Salinity and Temperature

Temp (°C)	Salinity (ppt)					
	60	35	30	15	5	1.5
	Density (g/cm ³)					
30	1.0403	1.0217	1.0180	1.0069	0.9995	0.9969
29	1.0407	1.0221	1.0183	1.0072	0.9997	0.9971
28	1.0411	1.0224	1.0187	1.0075	1.0000	0.9974
27	1.0414	1.0227	1.0190	1.0078	1.0003	0.9977
26	1.0418	1.0231	1.0193	1.0081	1.0006	0.9979
25	1.0422	1.0234	1.0196	1.0083	1.0008	0.9982
24	1.0425	1.0237	1.0199	1.0086	1.0011	0.9984
23	1.0429	1.0240	1.0202	1.0088	1.0013	0.9986
22	1.0432	1.0243	1.0205	1.0091	1.0015	0.9989
21	1.0435	1.0245	1.0207	1.0093	1.0017	0.9991
20	1.0438	1.0248	1.0210	1.0096	1.0019	0.9993

The relationship between the dependent variable – density, and the independent variables - temperature and salinity is as follows (Thomann and Mueller, 1987):

$$\text{Density} = 1 + \{10^{-3} [(28.14 - 0.0735T - 0.00469T^2) + (0.802 - 0.002T)(S - 35)]\}$$

where T is the temperature in Celsius (°C) and S is the salinity in parts per thousand (ppt). Open ocean density is typically about 1.02478 grams per cubic centimeters (g/cm³).

Appendix F PLUMES Simulation Results

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Dilution Factors at Various Distances for Critical Discharge Conditions	2
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APPENDIX F-1

Dilution Factors at Various Distances for Critical Discharge Conditions

	Run Parameters					Acute Zone							First Local Maximum						Second Local Maximum											
	Salinity (psu)	Curr. Vel. (m/s)	Season ()	Distr.	Flow (mgd)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	Temp (C)	P-speed (m/s)	Dilut. ()	Depth (ft)	x-pos. (ft)	y-pos. (ft)	Hor. Dist. (ft)	Time (s)	Dilut. ()	Depth (ft)	V-angle (deg)	x-pos. (ft)	y-pos. (ft)	Hor. Dist. (ft)	Dilut. ()	Depth (ft)		V-angle (deg)	x-pos. (ft)	y-pos. (ft)	Hor. Dist. (ft)	
1	529	30	0.0001	Summer	NON	3	116.8	18.46	36.12	25.54	0.369	19.8	39.5	22.3	0.0	22.3	10.3	39.2	32.5	-0.1	45.1	0.0	45.1	56.5	38.5	0.5	67.5	0.0	67.5	Local Min.
2	529	30	0.0001	Summer	UNI	3	116.8	18.57	36.12	25.5	0.369	19.8	39.5	22.3	0.0	22.3	10.3	39.1	32.6	-0.3	45.0	0.0	45.0	56.3	38.5	0.2	67.2	0.0	67.2	Local Min.
3	513	30	0.0001	Winter	NON	3	116.8	18.66	35.94	21.24	0.369	19.8	39.5	22.3	0.0	22.3	10.3	68.8	10.8	42.0	71.5	0.0	71.5						Surface	
4	498	30	0.0001	Winter	UNI	3	116.8	18.66	35.94	21.24	0.369	19.8	39.5	22.3	0.0	22.3	10.3	68.8	10.8	42.0	71.5	0.0	71.5						Surface	
5	480	15	0.0001	Summer	NON	3	115.4	26.15	35.38	25.56	0.382	20.0	38.3	22.0	0.0	22.0	10.2	46.2	25.9	-0.1	50.8	0.0	50.8	65.9	36.9	0.4	75.2	0.0	75.2	Local Min.
6	480	15	0.0001	Summer	UNI	3	115.4	26.23	35.38	25.52	0.382	20.0	38.3	22.0	0.0	22.0	10.2	46.0	26.0	-0.2	50.6	0.0	50.6	65.6	36.9	0.2	74.9	0.0	74.9	Local Min.
7	468	15	0.0001	Winter	NON	3	115.4	26.44	35.2	21.24	0.383	20.0	38.3	22.0	0.0	22.0	10.2	64.0	5.8	59.8	54.2	0.0	54.2						Surface	
8	453	15	0.0001	Winter	UNI	3	115.4	26.44	35.2	21.24	0.383	20.0	38.3	22.0	0.0	22.0	10.2	64.0	5.8	59.8	54.2	0.0	54.2						Surface	
9	329	30	0.0001	Summer	NON	2	117.6	22.6	36.12	25.55	0.248	20.2	38.7	22.4	0.0	22.4	15.7	33.6	32.7	-0.3	38.4	0.0	38.4	47.1	38.8	0.5	56.8	0.0	56.8	Local Min.
10	328	30	0.0001	Summer	UNI	2	117.5	22.81	36.12	25.52	0.248	20.2	38.7	22.4	0.0	22.4	15.7	33.5	32.7	-0.4	38.3	0.0	38.3	46.9	38.8	0.2	56.5	0.0	56.5	Local Min.
11	321	30	0.0001	Winter	NON	2	117.4	23.16	35.94	21.24	0.249	20.2	38.7	22.4	0.0	22.4	15.7	66.0	6.9	53.6	60.6	0.0	60.6						Surface	
12	314	30	0.0001	Winter	UNI	2	117.4	23.16	35.94	21.24	0.249	20.2	38.7	22.4	0.0	22.4	15.7	65.9	6.9	53.6	60.6	0.0	60.6						Surface	
13	380	60	0.0001	Summer	UNI	2	136.4	-24.77	37.61	26.17	0.188	20.2	34.7	22.0	0.0	22.0	23.2	18.0	33.8	-0.3	18.3	0.0	18.3	35.0	47.5	-57.3	34.2	0.0	34.2	Bottom Hit
14	381	60	0.0001	Summer	NON	2	136.6	-24.79	37.6	26.19	0.188	20.3	34.7	22.1	0.0	22.1	23.3	18.0	33.8	-0.4	18.3	0.0	18.3	34.9	47.4	-57.3	34.2	0.0	34.2	Bottom Hit
15	431	5	0.0001	Summer	NON	3	116.9	31.35	34.95	25.58	0.386	20.6	37.3	22.3	0.0	22.3	10.6	64.5	13.3	-0.2	68.0	0.0	68.0	99.7	35.2	0.5	106.2	0.1	106.2	Local Min.
16	430	5	0.0001	Summer	UNI	3	116.8	31.4	34.95	25.54	0.386	20.6	37.3	22.3	0.0	22.3	10.6	63.9	13.7	0.0	67.4	0.0	67.4	98.8	35.3	0.3	105.3	0.1	105.3	Local Min.
17	423	5	0.0001	Winter	NON	3	116.7	31.71	34.77	21.24	0.388	20.6	37.3	22.3	0.0	22.3	10.6	64.4	3.7	64.8	49.1	0.0	49.1						Surface	
18	408	5	0.0001	Winter	UNI	3	116.7	31.71	34.77	21.24	0.388	20.6	37.3	22.3	0.0	22.3	10.6	64.4	3.7	64.8	49.1	0.0	49.1						Surface	
19	369	60	0.0001	Winter	NON	2	145.8	-10.53	37.41	21.25	0.169	20.8	33.5	22.1	0.0	22.1	23.5	19.5	33.3	-0.2	20.1	0.0	20.1	35.5	45.4	-60.2	35.2	0.0	35.2	Bottom Hit
20	362	60	0.0001	Winter	UNI	2	145.8	-10.53	37.41	21.25	0.169	20.8	33.5	22.1	0.0	22.1	23.5	19.5	33.3	-0.2	20.1	0.0	20.1	35.5	45.4	-60.2	35.2	0.0	35.2	Bottom Hit
21	279	15	0.0001	Summer	NON	2	115.2	37.8	35.44	25.6	0.273	21.2	36.0	22.0	0.0	22.0	15.7	43.1	24.0	0.0	44.4	0.0	44.4	61.8	36.9	0.5	65.8	0.0	65.8	Local Min.
22	278	15	0.0001	Summer	UNI	2	115.1	37.87	35.44	25.57	0.273	21.2	36.0	22.0	0.0	22.0	15.7	42.8	24.2	-0.2	44.0	0.0	44.0	61.0	36.9	0.2	65.2	0.0	65.2	Local Min.
23	276	15	0.0001	Winter	NON	2	115.8	38.9	35.27	21.24	0.274	21.4	35.9	22.2	0.0	22.2	16.0	63.5	3.5	68.7	43.0	0.0	43.0						Surface	
24	269	15	0.0001	Winter	UNI	2	115.8	38.9	35.27	21.24	0.274	21.4	35.9	22.2	0.0	22.2	16.0	63.5	3.6	68.7	43.0	0.0	43.0						Surface	
25	130	30	0.0001	Summer	NON	1	116.7	39.2	36.14	25.62	0.136	21.8	35.2	22.1	0.0	22.1	31.9	26.0	32.3	-0.2	27.7	0.0	27.7	35.0	39.2	0.4	40.1	0.0	40.1	Local Min.

APPENDIX F-1

Dilution Factors at Various Distances for Critical Discharge Conditions

Run Parameters				Acute Zone										First Local Maximum						Second Local Maximum											
Salinity	Curr. Vel.	Season	Distr.	Flow	P-dia	V-angle	Eff-sal	Temp	P-speed	Dilut.	Depth	x-pos.	y-pos.	Hor. Dist.	Time	Dilut.	Depth	V-angle	x-pos.	y-pos.	Hor. Dist.	Dilut.	Depth	V-angle	x-pos.	y-pos.	Hor. Dist.				
(psu)	(m/s)	()		(mgd)	(in)	(deg)	(psu)	(C)	(m/s)	()	(ft)	(ft)	(ft)	(ft)	(s)	()	(ft)	(deg)	(ft)	(ft)	(ft)	()	(ft)	(deg)	(ft)	(ft)	(ft)				
26	1136	30		0.05	Summer	NON	3	128.8	18.54	36.15	25.54	0.335	21.8	39.5	22.1	0.6	22.1	10.7	47.0	33.2	-0.5	42.5	3.2	42.6	69.7	37.9	0.5	60.4	7.7	60.9	Local Min.
27	130	30		0.0001	Summer	UNI	1	116.6	39.29	36.14	25.59	0.136	21.8	35.2	22.0	0.0	22.0	31.7	25.9	32.3	-0.2	27.5	0.0	27.5	34.9	39.2	0.4	39.9	0.0	39.9	Local Min.
28	128	30		0.0001	Winter	NON	1	114.5	42.25	35.97	21.24	0.143	21.8	35.2	22.0	0.0	22.0	31.5	64.9	2.6	69.8	41.2	0.0	41.2							Surface
29	1101	30		0.05	Winter	NON	3	128.8	18.79	35.97	21.24	0.336	21.9	39.5	22.1	0.6	22.1	10.7	104.1	16.8	37.4	61.9	10.5	62.8							Surface
30	128	30		0.0001	Winter	UNI	1	116	42.81	35.97	21.24	0.142	22.2	34.9	22.3	0.0	22.3	32.4	64.9	2.5	69.8	41.2	0.0	41.2							Surface
31	1087	15		0.05	Summer	NON	3	129.5	26.83	35.5	25.57	0.342	22.5	38.2	22.1	0.7	22.1	11.0	53.6	28.2	-0.3	44.0	4.1	44.2	77.8	36.3	0.2	61.7	9.8	62.5	Local Min.
32	1054	15		0.05	Winter	NON	3	129.3	27.2	35.32	21.24	0.343	22.5	38.2	22.1	0.7	22.1	11.0	97.4	8.7	57.2	50.2	7.6	50.8							Surface
33	577	60		0.0001	Summer	UNI	3	158.5	9.704	37.46	26.61	0.232	22.6	29.5	22.1	0.0	22.1	16.7	23.8	29.3	-0.1	24.1	0.0	24.1	45.6	46.6	-46.5	45.7	0.0	45.7	Bottom Hit
34	577	60		0.0001	Summer	NON	3	158.6	9.724	37.46	26.63	0.232	22.6	29.5	22.1	0.0	22.1	16.7	23.8	29.3	0.0	24.1	0.0	24.1	45.6	46.6	-46.7	45.8	0.0	45.8	Bottom Hit
35	231	5		0.0001	Winter	NON	2	115.1	47.07	34.9	21.24	0.294	22.7	33.9	22.1	0.0	22.1	16.4	64.1	2.8	72.2	38.1	0.0	38.1							Surface
36	224	5		0.0001	Winter	UNI	2	115.1	47.07	34.9	21.24	0.294	22.7	33.9	22.1	0.0	22.1	16.4	64.1	2.8	72.2	38.1	0.0	38.1							Surface
37	233	5		0.0001	Summer	UNI	2	117	45.94	35.09	25.68	0.285	22.9	33.8	22.3	0.0	22.3	16.7	61.8	6.3	15.7	55.1	0.0	55.1							Surface
38	542	60		0.0001	Winter	UNI	3	155.7	23.54	37.29	21.26	0.244	23.1	28.4	22.1	0.0	22.1	16.8	29.1	26.6	-0.1	30.4	0.0	30.4	52.3	43.9	-59.4	52.7	0.0	52.7	Bottom Hit
39	1072	30		0.05	Winter	UNI	3	136.4	18.82	35.98	21.23	0.318	23.2	39.5	22.0	1.0	22.0	11.0	108.7	17.7	36.3	59.9	14.2	61.5							Surface
40	1133	30		0.05	Summer	UNI	3	139	18.76	36.17	25.5	0.311	23.6	39.4	22.3	1.0	22.4	11.4	50.6	33.5	-0.6	41.3	5.0	41.6	76.8	38.0	0.1	58.3	11.5	59.4	Local Min.

Appendix F-1b

VP Text Output of Modeling Runs described in Phase 1 of the Modeling Results

SUMMER (UNIFORM DISTRIBUTION)

/ UM3. 8/11/2006 2:51:17 PM

Case 1; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	28.0	1.0

Simulation:

Froude number: 12.58; effleunt density (sigma-T) 0.034; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)

```

0      46.0 3.592E-5      6.0      15.0      5.0      2.402      1.0      0.0      0.0      0.0;
19     45.85 3.755E-5     8.613     15.48     14.86     1.652     1.446     0.533 2.013E-6 0.0869; stream limit reached;
100    43.2 6.844E-5     39.91     32.56     32.09      0.38     7.096     6.856 0.000404 3.66;
190    18.61 0.000107     154.1     65.93     35.6      0.141     39.41     22.06 0.0106 45.58; acute zone;
196    14.93 0.000112     172.7     66.1      35.68     0.126     44.38     23.7 0.0132 54.88; trap level;
200    12.23 0.000116     187.4     65.92     35.73     0.116     48.04     24.9 0.0155 62.42;
208    6.117 0.000124     223.5     64.89     35.82     0.0949     56.29     27.7 0.0215 82.26; matched energy radial
vel = 0.0723m/s;
213    1.743 0.00013      251.1     63.87     35.87     0.0829     62.15     29.8 0.0268 99.19; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.38 m
  conc dilutn width distnce time
  (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
1.61E-4 6204.4 880.0 100.0 2525.4 0.0 0.0 1.00E-5 3.00E-4
1.11E-4 8990.8 1275.2 200.0 5303.2 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 2; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	28.0	1.0

Simulation:

Froude number: 15.15; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	3.592E-5	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;	
19	45.85	3.755E-5	8.626	15.33	21.72	1.651	1.449	0.537	2.027E-6	0.0875;	stream limit reached;
100	43.4	6.614E-5	40.92	28.08	33.47	0.363	7.141	7.048	0.000417	3.793;	
159	32.4	9.424E-5	97.82	57.38	35.46	0.194	21.87	17.58	0.00433	22.92;	trap level;
176	26.04	9.872E-5	144.6	51.12	35.69	0.121	30.05	22.02	0.00828	38.56;	acute zone;
200	21.42	0.000104	198.0	37.15	35.8	0.079	36.26	26.68	0.0138	59.36;	
201	21.33	0.000104	199.6	36.56	35.8	0.0781	36.4	26.81	0.014	60.0;	begin overlap;
265	19.39	0.000107	239.1	-0.454	35.84	0.0588	38.88	32.0	0.0213	86.32;	local maximum rise or fall;
300	19.85	0.000106	235.9	-20.43	35.85	0.0616	39.54	34.36	0.0247	98.67;	
342	22.67	0.000103	222.3	-44.06	35.88	0.0748	42.52	38.48	0.031	121.0;	end overlap;
378	33.62	9.420E-5	232.6	-62.59	35.99	0.0878	56.51	45.75	0.0447	168.4;	trap level;
381	35.13	9.266E-5	255.2	-58.62	36.0	0.0749	58.54	46.6	0.0466	175.0;	begin overlap;
400	35.72	9.216E-5	296.3	-47.08	36.0	0.0571	58.69	47.03	0.0476	178.4;	
482	36.09	9.189E-5	361.3	0.415	36.0	0.0389	58.72	47.72	0.0492	183.8;	local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.18 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.99E-4	5034.6	1087.3	100.0	2373.8	0.0	0.0	1.00E-5	3.00E-4
1.35E-4	7416.6	1601.8	200.0	5151.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 3; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 3: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3

13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 26.13; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	3.592E-5	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
19	45.85	3.756E-5	8.645	15.11	32.02	1.65	1.454	0.543	2.049E-6	0.0885; stream limit reached;
100	43.77	6.187E-5	42.39	19.83	35.54	0.34	7.21	7.331	0.000436	3.991;
156	35.16	9.233E-5	116.6	39.29	36.14	0.136	21.84	22.04	0.00596	31.74; acute zone;
157	34.86	9.254E-5	118.8	39.23	36.15	0.134	22.28	22.41	0.00622	32.84; trap level;
167	33.33	9.378E-5	137.1	32.8	36.17	0.112	24.56	24.46	0.00773	39.22; begin overlap;
200	32.45	9.443E-5	154.2	13.56	36.18	0.0928	25.6	26.43	0.00931	45.76;
224	32.33	9.452E-5	158.5	-0.23	36.18	0.0891	25.9	27.52	0.0102	49.47; local maximum rise or fall;
292	33.95	9.345E-5	150.6	-38.62	36.19	0.106	27.79	31.29	0.0135	62.72; end overlap;
300	35.08	9.276E-5	153.8	-42.59	36.2	0.107	29.35	32.58	0.0147	67.62;
303	36.27	9.207E-5	160.6	-42.46	36.21	0.101	30.98	33.87	0.016	72.79; trap level;
311	37.47	9.098E-5	178.2	-36.66	36.23	0.088	32.7	35.32	0.0175	78.95; begin overlap;
375	39.2	8.971E-5	213.5	0.377	36.24	0.0661	34.9	39.91	0.0229	99.59; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 5.42 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.77E-4	3614.2	776.4	100.0	2439.9	0.0	0.0	1.00E-5	3.00E-4
1.89E-4	5285.2	1135.3	200.0	5217.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 4; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 4: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13

3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	28.0	1.0

Simulation:

Froude number: -15.33; effleunt density (sigma-T) 41.53; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	3.592E-5	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;	
19	45.59	4.047E-5	8.695	44.75	52.61	1.642	1.464	0.407	2.149E-6	0.0906;	stream limit reached;
100	41.03	8.839E-5	46.57	29.45	39.8	0.278	7.111	5.969	0.000637	4.498;	
151	39.93	8.920E-5	69.85	0.0607	38.86	0.174	9.882	9.719	0.00179	10.19;	begin overlap;
152	39.93	8.920E-5	70.12	-0.512	38.85	0.174	9.92	9.776	0.00181	10.29;	local maximum rise or fall;
195	40.51	8.882E-5	77.98	-25.03	38.51	0.165	11.57	12.21	0.00282	14.9;	end overlap;
200	40.66	8.871E-5	78.66	-27.87	38.47	0.165	11.81	12.51	0.00297	15.53;	
265	48.45	1.059E-5	96.42	-64.22	37.6	0.192	20.65	18.67	0.00683	32.41;	bottom hit;
287	57.67	-9.804E-5	121.7	-73.05	37.2	0.186	31.91	22.11	0.0092	48.19;	acute zone;
300	64.5	-0.000179	142.9	-76.07	37.03	0.174	41.28	23.96	0.00946	60.23;	
327	83.47	-0.000402	217.3	-78.83	36.82	0.126	70.47	27.99	5.449E-5	99.71;	trap level;
346	98.13	-0.000585	369.4	-71.02	36.76	0.057	93.15	31.41	-0.0295	150.3;	begin overlap;
400	100.8	-0.00062	586.0	-38.93	36.76	0.0235	94.26	32.83	-0.0463	173.9;	
468	101.0	-0.000622	667.2	0.332	36.76	0.0183	94.27	33.34	-0.0523	182.4;	local maximum rise or fall;
500	100.9	-0.000622	650.6	18.61	36.76	0.0193	94.27	33.54	-0.0548	185.8;	
600	96.47	-0.000572	361.3	74.37	36.75	0.066	97.0	35.74	-0.0812	222.5;	end overlap;
615	82.05	-0.000412	349.0	80.03	36.72	0.0833	119.8	38.6	-0.127	277.2;	trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.86 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
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9.47E-5 10557.8 1079.6 100.0 2450.9 0.0 0.0 1.00E-5 3.00E-4
 6.49E-5 15420.4 1576.8 200.0 5228.7 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 5; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.000.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 25.16; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	3.592E-5	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.79	6.173E-5	42.01	20.19	32.09	0.682	7.096	7.235	0.000215	1.97;
160	33.76	9.328E-5	117.0	45.94	35.09	0.285	22.88	22.33	0.00319	16.68; acute zone;
171	29.48	9.622E-5	143.2	47.28	35.34	0.235	28.44	26.32	0.00489	23.64; trap level;
200	13.55	0.000115	265.3	40.07	35.76	0.119	49.65	42.34	0.0166	66.38;
221	8.39	0.000122	333.0	27.79	35.84	0.0889	57.63	49.9	0.0247	93.82; matched energy radial
vel = 0.0736m/s;										
228	7.492	0.000123	349.2	23.73	35.86	0.0835	59.35	51.78	0.027	101.2; begin overlap;
242	6.318	0.000125	373.2	15.65	35.88	0.0763	61.75	55.09	0.0311	114.7; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.48 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.93E-4	5167.7	1096.4	100.0	2311.3	0.0	0.0	1.00E-5	3.00E-4
1.30E-4	7667.9	1626.9	200.0	5089.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 6; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 6: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	28.0	1.0

Simulation:

Froude number: 30.3; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	3.592E-5	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.85	6.103E-5	42.34	18.66	33.47	0.676	7.141	7.306	0.000217	1.992;
155	36.03	9.173E-5	115.1	37.87	35.44	0.273	21.19	22.02	0.00291	15.72; acute zone;
165	32.7	9.401E-5	136.8	40.83	35.61	0.234	25.83	25.97	0.00438	21.96; trap level;
200	25.59	9.918E-5	219.0	21.56	35.82	0.133	37.06	36.66	0.0102	44.76;
222	24.43	0.0001	247.9	9.026	35.86	0.114	40.66	40.99	0.0132	56.03; begin overlap;

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238      24.2   0.0001   263.1   -0.17   35.89   0.107   42.82   44.04   0.0155   64.53; local maximum rise or
fall;
300      27.65  9.789E-5   277.4   -35.61   35.95   0.113   49.92   54.44   0.0244   96.63;
304      28.21  9.751E-5   277.8   -37.85   35.96   0.114   50.72   55.18   0.0251   99.13; end overlap;
324      34.6   9.355E-5   295.7   -47.64   36.01   0.115   59.16   61.6    0.0318   122.7; trap level;
327      35.75  9.219E-5   316.1   -43.27   36.02   0.103   60.69   62.74   0.0331   127.3; begin overlap;
400      36.88  9.134E-5   375.4   -0.931   36.02   0.0749   61.02   65.11   0.0359   136.9;
402      36.88  9.134E-5   375.5    0.216   36.02   0.0748   61.03   65.16   0.0359   137.1; local maximum rise or
fall;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of      9.54 m
  conc dilutn  width distnce  time
(kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
2.00E-4  5002.1  1080.3  100.0  2226.1   0.0    0.0 1.00E-5 3.00E-4
1.33E-4  7499.3  1619.7  200.0  5003.9   0.0    0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 7; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 7: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	3.592E-5	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0	stream limit reached;
100	43.95	5.991E-5	42.81	16.25	35.54	0.667	7.21	7.412	0.00022	2.025	
152	38.68	8.995E-5	117.5	22.81	36.12	0.248	20.18	22.41	0.0028	15.65	acute zone;
168	34.9	9.253E-5	159.3	25.61	36.2	0.185	27.7	30.63	0.00584	28.77	trap level;
183	33.16	9.391E-5	188.4	16.33	36.23	0.153	31.52	34.92	0.00791	37.21	begin overlap;
200	32.75	9.422E-5	199.9	6.475	36.23	0.142	32.82	36.98	0.00901	41.6	
212	32.69	9.427E-5	204.7	-0.414	36.24	0.138	33.47	38.27	0.00972	44.43	local maximum rise or fall;
254	33.9	9.348E-5	213.2	-24.13	36.25	0.139	36.46	43.24	0.0126	55.86	end overlap;
266	36.28	9.207E-5	230.7	-28.68	36.26	0.129	40.74	47.73	0.0156	67.36	trap level;
277	37.74	9.079E-5	256.8	-21.19	36.27	0.113	43.62	50.85	0.0179	76.11	begin overlap;
300	38.71	9.007E-5	279.9	-7.871	36.28	0.101	46.01	54.59	0.0209	87.22	
314	38.83	8.997E-5	287.0	0.172	36.28	0.0984	46.91	56.53	0.0225	93.17	local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.29 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.34E-4	4274.2	917.7	100.0	2299.1	0.0	0.0	1.00E-5	3.00E-4
1.57E-4	6351.3	1363.7	200.0	5076.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 8; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 8: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43

14.94 0.0 90.0 36.44 24.97 0.0 0.0 0.00001 90.0 0.0003 24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -30.66; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	3.592E-5	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0	stream limit reached;
100	40.54	8.869E-5	44.44	41.87	39.69	0.63	7.349	5.684	0.000306	2.143	
165	33.93	9.339E-5	118.5	11.17	37.84	0.207	16.95	16.5	0.00311	14.17	begin overlap;
185	33.77	9.351E-5	127.2	-0.331	37.76	0.192	17.99	18.25	0.0038	16.88	local maximum rise or fall;
200	33.88	9.345E-5	131.1	-8.905	37.71	0.187	18.64	19.49	0.00431	18.88	
228	34.67	9.291E-5	136.4	-24.77	37.61	0.188	20.22	22.01	0.00542	23.2	acute zone;
230	34.77	9.285E-5	136.9	-25.9	37.6	0.188	20.39	22.22	0.00552	23.57	end overlap;
287	47.45	2.607E-5	181.2	-57.34	37.11	0.183	34.98	34.18	0.0131	51.98	bottom hit;
300	56.71	8.282E-5	217.9	-62.08	36.96	0.163	45.25	39.48	0.0173	70.85	
311	66.36	-0.000196	263.6	-63.41	36.87	0.137	56.26	44.38	0.0198	92.98	trap level;
330	79.31	-0.00036	383.6	-53.76	36.79	0.0821	71.13	51.7	0.0177	134.8	begin overlap;
400	83.55	-0.000414	511.8	-12.89	36.78	0.0483	73.33	56.89	0.0123	168.1	
423	83.65	-0.000415	519.4	0.32	36.78	0.047	73.4	57.85	0.0112	174.3	local maximum rise or fall;
500	81.63	-0.000392	446.1	44.01	36.78	0.0649	73.99	61.88	0.00661	200.5	
526	77.24	-0.000342	398.3	58.38	36.77	0.0852	77.31	65.21	0.00221	222.6	end overlap;
542	64.22	-0.000201	415.5	65.54	36.73	0.0904	92.23	71.63	-0.0118	270.7	trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.55 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.39E-4	7218.0	1141.5	100.0	2171.3	0.0	0.0	1.00E-5	3.00E-4
9.18E-5	10896.9	1723.4	200.0	4949.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 9; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 9: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13

3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

Froude number: 37.74; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	3.592E-5	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.92	6.022E-5	42.35	17.37	32.09	1.007	7.096	7.299	0.000145	1.329;
154	37.26	9.090E-5	116.8	31.4	34.95	0.386	20.63	22.33	0.00194	10.63; acute zone;
172	31.34	9.493E-5	160.5	37.43	35.38	0.291	29.46	30.58	0.00416	19.95; trap level;
200	18.41	0.000108	288.0	27.2	35.77	0.153	49.87	50.31	0.0137	55.6;
232	14.04	0.000114	372.7	8.587	35.87	0.113	60.87	63.14	0.023	87.62; begin overlap;
247	13.74	0.000115	394.1	-0.034	35.9	0.106	63.91	67.42	0.0266	99.62; local maximum rise or fall;
291	16.75	0.000111	428.4	-25.05	35.95	0.103	72.86	79.98	0.0383	138.0; end overlap;
300	18.48	0.000109	436.2	-30.09	35.97	0.104	75.91	83.23	0.0416	148.9;
325	32.69	9.507E-5	503.6	-42.67	36.04	0.0962	96.18	101.3	0.0635	218.4; trap level;
326	34.01	9.427E-5	514.4	-40.55	36.05	0.0913	98.1	102.8	0.0657	225.2; matched energy radial
vel = 0.0288m/s;										
328	34.5	9.311E-5	535.8	-37.58	36.05	0.087	98.71	103.4	0.0665	227.9; begin overlap;
393	35.26	9.247E-5	610.4	0.278	36.05	0.0688	98.84	105.3	0.0692	236.4; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.50 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.58E-4	6342.3	1374.8	100.0	1886.0	0.0	0.0	1.00E-5	3.00E-4
1.00E-4	9973.1	2161.8	200.0	4663.8	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 10; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 10: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 45.45; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	3.592E-5	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.94	5.996E-5	42.56	16.66	33.47	1.003	7.141	7.35	0.000146	1.339;
152	38.3	9.020E-5	115.4	26.23	35.38	0.382	19.97	22.01	0.00182	10.2; acute zone;
170	33.25	9.363E-5	159.9	32.11	35.69	0.284	28.52	30.77	0.00405	19.71; trap level;
200	26.98	9.821E-5	243.8	15.9	35.87	0.176	40.57	43.73	0.00923	39.88;
222	26.06	9.890E-5	275.9	3.228	35.91	0.153	44.98	49.21	0.012	50.35; begin overlap;
228	26.03	9.893E-5	282.4	-0.214	35.92	0.149	45.98	50.55	0.0128	53.05; local maximum rise or fall;
269	28.05	9.759E-5	311.3	-23.56	35.96	0.141	52.83	59.62	0.0183	72.97; end overlap;
296	34.64	9.350E-5	342.9	-37.44	36.02	0.137	63.19	69.72	0.0256	99.05; trap level;
299	35.79	9.217E-5	362.9	-33.37	36.03	0.126	64.92	71.35	0.027	103.8; begin overlap;

300 35.85 9.210E-5 365.2 -32.72 36.03 0.125 64.96 71.45 0.027 104.0;
 357 36.93 9.130E-5 403.4 0.222 36.03 0.104 65.57 74.85 0.0298 113.9; local maximum rise or
 fall;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.25 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.94E-4 5149.5 1112.2 100.0 2144.0 0.0 0.0 1.00E-5 3.00E-4
 1.28E-4 7801.9 1685.0 200.0 4921.8 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 11; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 78.38; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time
 (ft) (m/s) (in) (deg) (psu) (m/s) () (ft) (ft) (s)
 0 46.0 3.592E-5 6.0 15.0 30.0 7.205 1.0 0.0 0.0 0.0; stream limit reached;
 100 43.98 5.954E-5 42.88 15.56 35.54 0.997 7.21 7.426 0.000147 1.354;
 151 39.45 8.943E-5 116.8 18.57 36.12 0.369 19.79 22.27 0.00181 10.25; acute zone;

172	35.19	9.234E-5	175.7	20.84	36.22	0.247	29.99	34.01	0.00483	23.22; trap level;
200	32.64	9.430E-5	230.7	4.908	36.26	0.184	37.85	43.37	0.00836	37.3; begin overlap;
209	32.58	9.435E-5	238.6	-0.26	36.26	0.177	39.05	45.0	0.00908	40.07; local maximum rise or fall;
239	33.47	9.377E-5	256.8	-17.27	36.27	0.169	42.97	50.43	0.0116	49.88; end overlap;
254	36.22	9.212E-5	283.5	-23.38	36.29	0.154	48.92	57.13	0.0153	63.5; trap level;
266	37.73	9.079E-5	315.3	-15.33	36.29	0.136	52.63	61.42	0.0179	73.12; begin overlap;
293	38.5	9.020E-5	344.4	0.23	36.3	0.123	56.32	67.19	0.0216	87.03; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.75 m

conc	dilutn	width	distnce	time						
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
2.11E-4	4733.1	1015.9	100.0	2208.9	0.0	0.0	1.00E-5	3.00E-4		
1.41E-4	7111.3	1526.4	200.0	4986.6	0.0	0.0	1.00E-5	3.00E-4		

count: 2

/ UM3.

Case 12; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 12: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -45.99; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	3.592E-5	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;	stream limit reached;
100	40.5	8.872E-5	43.82	43.68	39.69	0.972	7.349	5.594	0.000199	1.398;	
183	29.55	9.645E-5	157.0	10.85	37.47	0.235	22.45	21.83	0.0039	16.32;	begin overlap;
185	29.5	9.648E-5	158.5	9.704	37.46	0.232	22.62	22.08	0.00399	16.65;	acute zone;
200	29.34	9.661E-5	167.3	1.091	37.41	0.219	23.68	23.85	0.00463	19.07;	
202	29.34	9.661E-5	168.3	-0.0548	37.4	0.218	23.81	24.07	0.00472	19.39;	local maximum rise or fall;
254	31.08	9.545E-5	181.9	-29.66	37.25	0.216	27.56	30.14	0.00721	28.52;	end overlap;
295	42.86	8.204E-5	236.6	-47.89	36.97	0.187	41.26	42.25	0.0141	52.9;	trap level;
300	46.63	3.772E-5	263.7	-46.45	36.92	0.165	45.55	45.73	0.0166	61.89;	bottom hit;
322	53.97	-5.761E-5	350.6	-33.23	36.84	0.114	54.47	54.21	0.023	87.05;	begin overlap;
380	56.97	-9.548E-5	412.8	0.311	36.82	0.0888	58.35	63.28	0.0293	117.4;	local maximum rise or fall;
400	56.69	-9.237E-5	413.5	11.74	36.81	0.0897	59.02	65.84	0.031	126.3;	
452	51.61	-3.396E-5	394.7	41.08	36.78	0.107	64.12	74.95	0.0367	159.0;	end overlap;
473	40.17	8.811E-5	427.7	50.45	36.73	0.106	76.93	85.16	0.0428	201.4;	trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.86 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.72E-4	5804.1	1132.6	100.0	2056.8	0.0	0.0	1.00E-5	3.00E-4
1.12E-4	8898.2	1736.4	200.0	4834.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 13; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.001.db; Diffuser table record 1: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.067	90.0	36.35	28.92	0.0	0.0	0.067	90.0	0.0003	23.13
3.048	0.0601	90.0	36.35	28.92	0.0	0.0	0.0601	90.0	0.0003	23.13
3.962	0.058	90.0	36.35	28.91	0.0	0.0	0.058	90.0	0.0003	23.13
4.877	0.0559	90.0	36.35	28.85	0.0	0.0	0.0559	90.0	0.0003	23.15
6.096	0.0531	90.0	36.36	28.78	0.0	0.0	0.0531	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0495	90.0	36.24	28.56	0.0	0.0	0.0495	90.0	0.0003	23.17
9.144	0.0481	90.0	36.29	28.5	0.0	0.0	0.0481	90.0	0.0003	23.22
10.06	0.047	90.0	36.38	28.13	0.0	0.0	0.047	90.0	0.0003	23.41
10.97	0.046	90.0	36.41	25.88	0.0	0.0	0.046	90.0	0.0003	24.16
12.7	0.044	90.0	36.47	25.57	0.0	0.0	0.044	90.0	0.0003	24.3

13.11	0.0359	90.0	36.42	25.33	0.0	0.0	0.0359	90.0	0.0003	24.34
14.02	0.018	90.0	36.43	25.05	0.0	0.0	0.018	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	28.0	1.0

Simulation:

Froude number: 12.58; effleunt density (sigma-T) 0.034; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	43.6	0.0319	40.27	30.58	32.09	0.373	7.096	6.14	0.172	3.198;
176	32.01	0.0473	126.3	61.43	35.46	0.17	31.88	15.04	2.329	23.05; trap level;
200	26.66	0.0492	203.2	52.07	35.75	0.102	49.4	17.77	4.323	37.88;
204	26.11	0.0494	215.8	50.01	35.78	0.095	52.0	18.09	4.634	40.1; begin overlap;
236	22.49	0.0513	305.1	33.5	35.93	0.0658	71.43	20.68	7.761	61.81; acute zone;
295	20.45	0.0528	368.0	-0.104	35.99	0.0533	83.44	24.05	13.09	97.54; local maximum rise or fall;
300	20.47	0.0528	368.7	-2.961	36.0	0.0533	83.78	24.3	13.5	100.3;
352	23.21	0.051	371.9	-31.54	36.05	0.0612	97.64	27.79	19.78	141.7; end overlap;
364	26.04	0.0495	413.5	-35.23	36.11	0.0623	122.3	29.52	23.74	167.4; begin overlap;
377	28.28	0.0488	411.5	-42.32	36.12	0.0683	133.0	30.46	26.27	183.6; end overlap;
385	31.44	0.0477	440.4	-43.04	36.15	0.0682	154.9	31.51	29.44	203.9; trap level;
386	31.77	0.0476	446.9	-42.16	36.15	0.0672	157.6	31.61	29.78	206.0; matched energy radial
vel = 0.0197m/s;										
387	31.96	0.0475	452.6	-41.42	36.15	0.0663	159.1	31.67	29.99	207.4; begin overlap;
400	33.07	0.047	487.0	-33.51	36.16	0.0595	164.3	32.08	31.37	216.2;
458	33.79	0.0468	538.8	0.402	36.16	0.0495	166.4	32.63	33.28	228.5; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.69 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
7.99E-5	12508.0	1422.1	100.0	2383.2	0.0	0.0	1.00E-5	3.00E-4
5.43E-5	18406.1	2092.7	200.0	5161.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 14; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.001.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.35	28.92	0.0	0.0	0.067	90.0	0.0003	23.13
3.048	0.0601	90.0	36.35	28.92	0.0	0.0	0.0601	90.0	0.0003	23.13
3.962	0.058	90.0	36.35	28.91	0.0	0.0	0.058	90.0	0.0003	23.13
4.877	0.0559	90.0	36.35	28.85	0.0	0.0	0.0559	90.0	0.0003	23.15
6.096	0.0531	90.0	36.36	28.78	0.0	0.0	0.0531	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0495	90.0	36.24	28.56	0.0	0.0	0.0495	90.0	0.0003	23.17
9.144	0.0481	90.0	36.29	28.5	0.0	0.0	0.0481	90.0	0.0003	23.22
10.06	0.047	90.0	36.38	28.13	0.0	0.0	0.047	90.0	0.0003	23.41
10.97	0.046	90.0	36.41	25.88	0.0	0.0	0.046	90.0	0.0003	24.16
12.7	0.044	90.0	36.47	25.57	0.0	0.0	0.044	90.0	0.0003	24.3
13.11	0.0359	90.0	36.42	25.33	0.0	0.0	0.0359	90.0	0.0003	24.34
14.02	0.018	90.0	36.43	25.05	0.0	0.0	0.018	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	28.0	1.0

Simulation:

Froude number: 15.15; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.018	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	43.77	0.031	41.16	26.48	33.47	0.358	7.141	6.287	0.177	3.297;
174	33.46	0.0468	132.2	56.22	35.75	0.15	30.87	16.16	2.493	25.08; trap level;
189	30.92	0.0477	174.9	48.85	35.87	0.108	38.92	17.79	3.476	32.69; begin overlap;
200	30.01	0.048	197.1	42.68	35.9	0.0924	42.01	18.51	3.997	36.61;
269	28.39	0.0486	248.6	2.948	35.94	0.0646	46.19	21.14	6.119	52.3; acute zone;
275	28.39	0.0486	249.2	-0.49	35.94	0.0644	46.3	21.32	6.27	53.41; local maximum rise or fall;
300	28.53	0.0486	247.1	-14.77	35.94	0.0663	46.72	22.08	6.913	58.14;
361	31.47	0.0476	226.8	-48.59	35.99	0.0907	53.76	25.02	9.553	77.37; end overlap;
371	33.92	0.0468	248.3	-50.81	36.05	0.0886	64.14	26.37	11.05	88.01; trap level;
374	34.49	0.0465	261.1	-48.63	36.06	0.0834	66.92	26.67	11.43	90.67; begin overlap;
400	35.56	0.0461	303.1	-33.09	36.08	0.065	69.53	27.39	12.36	97.25;
458	35.93	0.046	334.2	0.433	36.08	0.0543	70.13	28.07	13.27	103.6; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.49 m

conc	dilutn	width	distnce	time
(kg/kg)		(m)	(m)	(hrs)
				(kg/kg)
				(s-1)
				(m/s)(m0.67/s2)

1.57E-4 6351.5 1062.4 100.0 2514.9 0.0 0.0 1.00E-5 3.00E-4
 1.08E-4 9214.0 1541.2 200.0 5292.6 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 15; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.35	28.92	0.0	0.0	0.067	90.0	0.0003	23.13
3.048	0.0601	90.0	36.35	28.92	0.0	0.0	0.0601	90.0	0.0003	23.13
3.962	0.058	90.0	36.35	28.91	0.0	0.0	0.058	90.0	0.0003	23.13
4.877	0.0559	90.0	36.35	28.85	0.0	0.0	0.0559	90.0	0.0003	23.15
6.096	0.0531	90.0	36.36	28.78	0.0	0.0	0.0531	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0495	90.0	36.24	28.56	0.0	0.0	0.0495	90.0	0.0003	23.17
9.144	0.0481	90.0	36.29	28.5	0.0	0.0	0.0481	90.0	0.0003	23.22
10.06	0.047	90.0	36.38	28.13	0.0	0.0	0.047	90.0	0.0003	23.41
10.97	0.046	90.0	36.41	25.88	0.0	0.0	0.046	90.0	0.0003	24.16
12.7	0.044	90.0	36.47	25.57	0.0	0.0	0.044	90.0	0.0003	24.3
13.11	0.0359	90.0	36.42	25.33	0.0	0.0	0.0359	90.0	0.0003	24.34
14.02	0.018	90.0	36.43	25.05	0.0	0.0	0.018	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 26.13; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.018	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.06	0.0293	42.44	19.17	35.54	0.34	7.21	6.504	0.184	3.445;
183	35.47	0.0461	187.3	36.26	36.26	0.0904	37.28	20.82	4.107	39.98; trap level;
187	34.99	0.0463	200.0	34.09	36.27	0.0845	39.67	21.4	4.483	42.93; begin overlap;
189	34.85	0.0464	204.2	32.94	36.27	0.0826	40.29	21.58	4.602	43.87; acute zone;
200	34.38	0.0465	217.8	26.44	36.28	0.0757	41.78	22.25	5.072	47.52;
246	33.91	0.0467	236.5	-0.201	36.28	0.0666	43.07	23.75	6.161	55.93; local maximum rise or
fall;										
300	34.67	0.0465	225.5	-30.66	36.28	0.076	44.47	25.59	7.54	66.54;

```

311      35.5   0.0462   228.9  -35.96   36.29   0.078   47.39   26.55   8.302   72.36; end overlap;
314      36.02  0.046    237.7  -35.88   36.3    0.0757  50.13   27.09   8.768   75.88; trap level;
317      36.4   0.0459   248.6  -34.15   36.3    0.0725  52.36   27.49   9.133   78.61; begin overlap;
378      38.51  0.0451   316.0   0.378   36.32   0.0551  63.71   31.71   13.62   111.8; local maximum rise or
fall;

```

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.03 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.71E-4	5844.1	1017.6	100.0	2485.6	0.0	0.0	1.00E-5	3.00E-4
1.17E-4	8504.0	1480.8	200.0	5263.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 16; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.001.db; Diffuser table record 4: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.067	90.0	36.35	28.92	0.0	0.0	0.067	90.0	0.0003	23.13
3.048	0.0601	90.0	36.35	28.92	0.0	0.0	0.0601	90.0	0.0003	23.13
3.962	0.058	90.0	36.35	28.91	0.0	0.0	0.058	90.0	0.0003	23.13
4.877	0.0559	90.0	36.35	28.85	0.0	0.0	0.0559	90.0	0.0003	23.15
6.096	0.0531	90.0	36.36	28.78	0.0	0.0	0.0531	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0495	90.0	36.24	28.56	0.0	0.0	0.0495	90.0	0.0003	23.17
9.144	0.0481	90.0	36.29	28.5	0.0	0.0	0.0481	90.0	0.0003	23.22
10.06	0.047	90.0	36.38	28.13	0.0	0.0	0.047	90.0	0.0003	23.41
10.97	0.046	90.0	36.41	25.88	0.0	0.0	0.046	90.0	0.0003	24.16
12.7	0.044	90.0	36.47	25.57	0.0	0.0	0.044	90.0	0.0003	24.3
13.11	0.0359	90.0	36.42	25.33	0.0	0.0	0.0359	90.0	0.0003	24.34
14.02	0.018	90.0	36.43	25.05	0.0	0.0	0.018	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	28.0	1.0

Simulation:

```

Froude number:      -15.33; effleunt density (sigma-T)      41.53; effleunt velocity      2.402(m/s);
Depth  Amb-cur  P-dia  V-angle  Eff-sal  P-speed  Dilutn  x-posn  y-posn  Time
Step   (ft)   (m/s)   (in)   (deg)   (psu)   (m/s)   ( )     (ft)   (ft)   (s)
0      46.0   0.018   6.0    45.0    60.0    2.402   1.0    0.0    0.0    0.0;

```

```

100  41.61  0.0438  47.05  32.45  39.69  0.28  7.347  5.074  0.254  3.727;
133  40.5   0.0444  73.26  13.9  38.69  0.17  10.65  7.53  0.648  7.655; begin overlap;
158  40.35  0.0445  84.3  -0.305 38.42  0.147 12.09  8.811  0.932 10.25; local maximum rise or
fall;
200  40.82  0.0443  93.57  -24.1  38.14  0.139 14.11  10.81  1.462 14.88;
227  41.82  0.0433  99.94  -39.11 37.9  0.143 16.49  12.32  1.942 18.93; end overlap;
272  48.27  0.00629 122.7  -63.57 37.31  0.159 27.56  16.48  3.826 34.96; bottom hit;
300  58.46  -0.0548 168.8  -74.73 36.95  0.142 47.22  19.87  5.362 56.14;
320  63.52  -0.0859 224.7  -74.76 36.81  0.115 67.75  21.12  5.174 68.59; begin overlap;
330  65.15  -0.0957 249.8  -71.46 36.77  0.107 77.38  21.48  4.842 73.3; acute zone;
373  71.11  -0.132 336.2  -50.11 36.68  0.0916 119.9  22.74  1.814 94.94; trap level;
400  74.28  -0.151 376.8  -35.27 36.64  0.0923 151.4  23.4  -1.606 110.7;
441  78.26  -0.175 430.0  -12.47 36.61  0.108 229.6  24.38  -11.26 143.1; end overlap;
464  79.53  -0.183 463.4  0.172 36.59  0.124 306.1  25.18  -26.04 181.8; local maximum rise or
fall;
491  75.12  -0.158 546.3  7.181 36.57  0.143 494.1  26.54  -66.97 274.2; trap level;

```

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.88 m

```

      conc dilutn  width distnce
      (kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
2.84E-5 35268.2 1368.8 100.0 2167.9 0.0 0.0 1.00E-5 3.00E-4
1.88E-5 53267.9 2067.5 200.0 4945.6 0.0 0.0 1.00E-5 3.00E-4
count: 2

```

/ UM3.

Case 17; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.001.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.35	28.92	0.0	0.0	0.067	90.0	0.0003	23.13
3.048	0.0601	90.0	36.35	28.92	0.0	0.0	0.0601	90.0	0.0003	23.13
3.962	0.058	90.0	36.35	28.91	0.0	0.0	0.058	90.0	0.0003	23.13
4.877	0.0559	90.0	36.35	28.85	0.0	0.0	0.0559	90.0	0.0003	23.15
6.096	0.0531	90.0	36.36	28.78	0.0	0.0	0.0531	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0495	90.0	36.24	28.56	0.0	0.0	0.0495	90.0	0.0003	23.17
9.144	0.0481	90.0	36.29	28.5	0.0	0.0	0.0481	90.0	0.0003	23.22
10.06	0.047	90.0	36.38	28.13	0.0	0.0	0.047	90.0	0.0003	23.41
10.97	0.046	90.0	36.41	25.88	0.0	0.0	0.046	90.0	0.0003	24.16
12.7	0.044	90.0	36.47	25.57	0.0	0.0	0.044	90.0	0.0003	24.3
13.11	0.0359	90.0	36.42	25.33	0.0	0.0	0.0359	90.0	0.0003	24.34
14.02	0.018	90.0	36.43	25.05	0.0	0.0	0.018	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 25.16; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	43.94	0.03	42.05	19.81	32.09	0.681	7.096	6.795	0.0981	1.823;
174	33.37	0.0468	152.4	47.16	35.43	0.225	30.65	22.08	1.972	19.51; acute zone;
177	32.52	0.0471	161.0	47.16	35.48	0.213	32.52	22.84	2.177	21.14; trap level;
200	26.53	0.0492	252.8	38.05	35.75	0.13	48.69	28.73	4.312	37.29;
207	25.54	0.0496	277.3	34.32	35.79	0.116	52.49	29.98	4.898	41.54; begin overlap;
270	21.66	0.052	412.2	-0.246	35.96	0.0756	74.38	39.52	10.94	83.53; local maximum rise or fall;
300	22.45	0.0515	425.3	-17.18	35.98	0.0761	79.54	43.32	13.84	103.2;
349	29.2	0.0485	457.7	-43.63	36.07	0.0873	105.5	51.39	21.26	152.6; end overlap;
357	32.54	0.0473	494.6	-44.55	36.1	0.0839	121.0	53.56	23.8	169.2; trap level;
358	32.87	0.0472	503.2	-43.79	36.1	0.0823	122.8	53.77	24.06	170.9; matched energy radial vel = 0.0263m/s;
359	33.09	0.0471	510.1	-43.11	36.1	0.0811	123.9	53.92	24.25	172.2; begin overlap;
400	34.57	0.0465	595.3	-18.44	36.11	0.0618	127.1	55.23	25.94	183.3;
433	34.69	0.0464	612.8	0.569	36.11	0.0586	127.3	55.7	26.56	187.3; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.57 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.12E-4	8921.3	1507.4	100.0	2255.3	0.0	0.0	1.00E-5	3.00E-4
7.50E-5	13326.9	2251.8	200.0	5033.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 18; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.001.db; Diffuser table record 6: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.067	90.0	36.35	28.92	0.0	0.0	0.067	90.0	0.0003	23.13
3.048	0.0601	90.0	36.35	28.92	0.0	0.0	0.0601	90.0	0.0003	23.13
3.962	0.058	90.0	36.35	28.91	0.0	0.0	0.058	90.0	0.0003	23.13

4.877	0.0559	90.0	36.35	28.85	0.0	0.0	0.0559	90.0	0.0003	23.15
6.096	0.0531	90.0	36.36	28.78	0.0	0.0	0.0531	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0495	90.0	36.24	28.56	0.0	0.0	0.0495	90.0	0.0003	23.17
9.144	0.0481	90.0	36.29	28.5	0.0	0.0	0.0481	90.0	0.0003	23.22
10.06	0.047	90.0	36.38	28.13	0.0	0.0	0.047	90.0	0.0003	23.41
10.97	0.046	90.0	36.41	25.88	0.0	0.0	0.046	90.0	0.0003	24.16
12.7	0.044	90.0	36.47	25.57	0.0	0.0	0.044	90.0	0.0003	24.3
13.11	0.0359	90.0	36.42	25.33	0.0	0.0	0.0359	90.0	0.0003	24.34
14.02	0.018	90.0	36.43	25.05	0.0	0.0	0.018	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	28.0	1.0

Simulation:

Froude number: 30.3; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	43.99	0.0297	42.36	18.39	33.47	0.675	7.141	6.859	0.0991	1.843;
170	35.53	0.0461	150.7	40.03	35.7	0.215	28.52	22.1	1.847	18.79; acute zone;
177	33.76	0.0467	170.0	41.27	35.79	0.192	32.76	24.07	2.347	22.85; trap level;
195	30.59	0.0478	229.0	32.18	35.91	0.137	42.04	27.98	3.609	32.66; begin overlap;
200	30.17	0.048	239.9	29.33	35.93	0.129	43.43	28.64	3.859	34.55;
252	28.72	0.0485	287.8	-0.505	35.97	0.102	48.92	33.49	5.886	49.66; local maximum rise or fall;
300	29.98	0.0481	289.6	-27.77	35.99	0.109	52.61	37.66	7.804	63.76;
321	32.11	0.0474	296.2	-39.14	36.02	0.115	58.26	40.43	9.206	73.93; end overlap;
330	34.49	0.0466	321.4	-41.55	36.06	0.108	66.25	42.76	10.57	83.68; trap level;
332	34.95	0.0464	333.6	-39.79	36.07	0.104	68.02	43.22	10.86	85.76; begin overlap;
400	36.39	0.0458	395.2	-0.0508	36.08	0.0779	70.37	45.92	12.63	98.3;
401	36.39	0.0458	395.2	0.522	36.08	0.0779	70.38	45.95	12.65	98.43; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.04 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.71E-4	5856.2	1154.5	100.0	2374.3	0.0	0.0	1.00E-5	3.00E-4
1.15E-4	8626.5	1700.7	200.0	5152.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 19; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.001.db; Diffuser table record 7: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.35	28.92	0.0	0.0	0.067	90.0	0.0003	23.13
3.048	0.0601	90.0	36.35	28.92	0.0	0.0	0.0601	90.0	0.0003	23.13
3.962	0.058	90.0	36.35	28.91	0.0	0.0	0.058	90.0	0.0003	23.13
4.877	0.0559	90.0	36.35	28.85	0.0	0.0	0.0559	90.0	0.0003	23.15
6.096	0.0531	90.0	36.36	28.78	0.0	0.0	0.0531	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0495	90.0	36.24	28.56	0.0	0.0	0.0495	90.0	0.0003	23.17
9.144	0.0481	90.0	36.29	28.5	0.0	0.0	0.0481	90.0	0.0003	23.22
10.06	0.047	90.0	36.38	28.13	0.0	0.0	0.047	90.0	0.0003	23.41
10.97	0.046	90.0	36.41	25.88	0.0	0.0	0.046	90.0	0.0003	24.16
12.7	0.044	90.0	36.47	25.57	0.0	0.0	0.044	90.0	0.0003	24.3
13.11	0.0359	90.0	36.42	25.33	0.0	0.0	0.0359	90.0	0.0003	24.34
14.02	0.018	90.0	36.43	25.05	0.0	0.0	0.018	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.018	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.08	0.0292	42.81	16.15	35.54	0.667	7.21	6.954	0.101	1.872;
165	38.7	0.045	150.4	23.14	36.2	0.196	26.1	22.1	1.677	17.86; acute zone;
185	35.42	0.0461	218.3	25.08	36.27	0.138	38.79	29.05	3.496	32.78; trap level;
192	34.52	0.0465	244.9	21.22	36.28	0.123	43.02	31.02	4.181	38.12; begin overlap;
200	34.14	0.0466	258.1	16.52	36.29	0.115	44.7	32.07	4.575	41.17;
229	33.75	0.0468	276.1	-0.251	36.29	0.106	46.88	34.53	5.551	48.65; local maximum rise or fall;
276	35.31	0.0463	291.3	-26.07	36.3	0.107	52.89	39.39	7.635	64.44; end overlap;
280	36.12	0.046	307.6	-26.4	36.31	0.102	56.69	40.85	8.348	69.75; trap level;
283	36.59	0.0458	323.1	-24.46	36.31	0.0969	59.22	41.73	8.809	73.16; begin overlap;
300	37.79	0.0454	365.4	-14.98	36.33	0.0846	65.66	44.65	10.46	85.3;
327	38.32	0.0452	395.3	0.435	36.33	0.0778	70.41	48.18	12.65	101.2; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.04 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.71E-4	5836.2	1150.2	100.0	2356.0	0.0	0.0	1.00E-5	3.00E-4
1.16E-4	8614.9	1697.8	200.0	5133.8	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 20; ambient file C:\Plumes\Proj\00\OO_SUM_49ft_UNIa.001.db; Diffuser table record 8: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.067	90.0	36.35	28.92	0.0	0.0	0.067	90.0	0.0003	23.13
3.048	0.0601	90.0	36.35	28.92	0.0	0.0	0.0601	90.0	0.0003	23.13
3.962	0.058	90.0	36.35	28.91	0.0	0.0	0.058	90.0	0.0003	23.13
4.877	0.0559	90.0	36.35	28.85	0.0	0.0	0.0559	90.0	0.0003	23.15
6.096	0.0531	90.0	36.36	28.78	0.0	0.0	0.0531	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0495	90.0	36.24	28.56	0.0	0.0	0.0495	90.0	0.0003	23.17
9.144	0.0481	90.0	36.29	28.5	0.0	0.0	0.0481	90.0	0.0003	23.22
10.06	0.047	90.0	36.38	28.13	0.0	0.0	0.047	90.0	0.0003	23.41
10.97	0.046	90.0	36.41	25.88	0.0	0.0	0.046	90.0	0.0003	24.16
12.7	0.044	90.0	36.47	25.57	0.0	0.0	0.044	90.0	0.0003	24.3
13.11	0.0359	90.0	36.42	25.33	0.0	0.0	0.0359	90.0	0.0003	24.34
14.02	0.018	90.0	36.43	25.05	0.0	0.0	0.018	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -30.66; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	41.02	0.0442	44.29	42.2	39.69	0.634	7.349	5.162	0.132	1.896;
161	34.97	0.0463	133.5	17.39	37.65	0.189	19.64	14.24	1.413	12.77; begin overlap;
192	34.57	0.0465	154.0	-0.373	37.51	0.161	22.14	16.78	2.023	17.49; local maximum rise or fall;
200	34.61	0.0465	156.9	-4.937	37.49	0.158	22.6	17.36	2.174	18.64;


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247  36.15  0.046  173.1  -31.26  37.31  0.156  27.14  21.44  3.348  27.49; end overlap;
250  36.41  0.0459  175.7  -32.9  37.28  0.156  27.82  21.82  3.473  28.42; acute zone;
294  46.67  0.0175  242.9  -55.53  36.92  0.143  49.19  30.3  7.363  56.81; bottom hit;
300  51.22 -0.00814  263.5  -58.02  36.86  0.137  55.4  32.84  8.863  68.69;
311  57.94 -0.0506  321.4  -60.54  36.78  0.113  68.88  36.32  10.77  87.66; trap level;
321  61.68 -0.0743  392.2  -61.38  36.73  0.0905  81.94  38.26  11.47  100.6; begin overlap;
400  70.03 -0.126  685.0  -26.86  36.67  0.0403  109.9  44.38  10.18  154.1;
448  70.5  -0.129  728.3  0.552  36.67  0.0365  111.9  46.06  9.166  170.6; local maximum rise or
fall;
500  69.79 -0.125  680.2  30.01  36.67  0.0427  113.6  48.02  7.878  190.0;
560  60.65 -0.0713  657.3  42.09  36.62  0.0647  162.2  53.95  0.696  258.5; trap level;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.70 m
conc dilutn width distnce time
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
8.88E-5 11261.9 1602.4 100.0 2321.0 0.0 0.0 1.00E-5 3.00E-4
5.99E-5 16691.4 2374.9 200.0 5098.8 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 21; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.001.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.35	28.92	0.0	0.0	0.067	90.0	0.0003	23.13
3.048	0.0601	90.0	36.35	28.92	0.0	0.0	0.0601	90.0	0.0003	23.13
3.962	0.058	90.0	36.35	28.91	0.0	0.0	0.058	90.0	0.0003	23.13
4.877	0.0559	90.0	36.35	28.85	0.0	0.0	0.0559	90.0	0.0003	23.15
6.096	0.0531	90.0	36.36	28.78	0.0	0.0	0.0531	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0495	90.0	36.24	28.56	0.0	0.0	0.0495	90.0	0.0003	23.17
9.144	0.0481	90.0	36.29	28.5	0.0	0.0	0.0481	90.0	0.0003	23.22
10.06	0.047	90.0	36.38	28.13	0.0	0.0	0.047	90.0	0.0003	23.41
10.97	0.046	90.0	36.41	25.88	0.0	0.0	0.046	90.0	0.0003	24.16
12.7	0.044	90.0	36.47	25.57	0.0	0.0	0.044	90.0	0.0003	24.3
13.11	0.0359	90.0	36.42	25.33	0.0	0.0	0.0359	90.0	0.0003	24.34
14.02	0.018	90.0	36.43	25.05	0.0	0.0	0.018	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

Froude number: 37.74; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.01	0.0296	42.36	17.25	32.09	1.006	7.096	6.991	0.0679	1.26;
163	37.17	0.0455	138.2	32.49	35.19	0.33	24.65	22.18	1.104	11.69; acute zone;
180	32.76	0.047	185.9	37.78	35.54	0.254	34.51	28.15	2.073	19.63; trap level;
200	27.3	0.049	276.1	29.75	35.77	0.165	49.46	35.83	3.987	34.15;
218	25.04	0.0498	341.9	19.97	35.85	0.13	59.32	40.46	5.552	45.49; begin overlap;
255	23.3	0.0508	446.4	-0.258	35.97	0.0993	76.55	49.37	9.497	72.99; local maximum rise or fall;
300	25.94	0.0495	500.3	-25.6	36.04	0.096	92.32	59.13	14.95	109.9;
327	30.39	0.048	511.1	-40.29	36.06	0.104	104.8	64.55	18.5	133.7; end overlap;
333	33.21	0.0471	545.4	-40.87	36.09	0.0988	115.6	67.13	20.43	146.5; trap level;
334	33.65	0.047	555.5	-40.08	36.09	0.0966	117.5	67.54	20.76	148.6; matched energy radial
vel = 0.0332m/s;										
335	33.93	0.0468	564.7	-39.08	36.1	0.0946	118.8	67.81	20.97	150.1; begin overlap;
400	35.22	0.0462	655.3	-0.642	36.1	0.0728	120.6	70.02	22.77	162.0;
402	35.22	0.0462	655.4	0.505	36.1	0.0728	120.6	70.07	22.81	162.2; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.65 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.24E-4	8073.6	1540.5	100.0	2153.9	0.0	0.0	1.00E-5	3.00E-4
8.18E-5	12216.2	2331.0	200.0	4931.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 22; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.001.db; Diffuser table record 10: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.067	90.0	36.35	28.92	0.0	0.0	0.067	90.0	0.0003	23.13
3.048	0.0601	90.0	36.35	28.92	0.0	0.0	0.0601	90.0	0.0003	23.13
3.962	0.058	90.0	36.35	28.91	0.0	0.0	0.058	90.0	0.0003	23.13
4.877	0.0559	90.0	36.35	28.85	0.0	0.0	0.0559	90.0	0.0003	23.15
6.096	0.0531	90.0	36.36	28.78	0.0	0.0	0.0531	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0495	90.0	36.24	28.56	0.0	0.0	0.0495	90.0	0.0003	23.17
9.144	0.0481	90.0	36.29	28.5	0.0	0.0	0.0481	90.0	0.0003	23.22

10.06	0.047	90.0	36.38	28.13	0.0	0.0	0.047	90.0	0.0003	23.41
10.97	0.046	90.0	36.41	25.88	0.0	0.0	0.046	90.0	0.0003	24.16
12.7	0.044	90.0	36.47	25.57	0.0	0.0	0.044	90.0	0.0003	24.3
13.11	0.0359	90.0	36.42	25.33	0.0	0.0	0.0359	90.0	0.0003	24.34
14.02	0.018	90.0	36.43	25.05	0.0	0.0	0.018	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 45.45; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.03	0.0295	42.57	16.57	33.47	1.003	7.141	7.039	0.0684	1.269;
161	38.19	0.0451	136.9	27.08	35.56	0.325	23.86	22.0	1.05	11.31; acute zone;
181	33.67	0.0467	196.5	32.44	35.84	0.233	35.45	29.54	2.257	21.28; trap level;
200	30.38	0.0479	265.8	22.53	35.95	0.167	46.03	35.47	3.661	32.09;
202	30.21	0.048	271.1	21.39	35.96	0.163	46.77	35.87	3.772	32.92; begin overlap;
240	29.01	0.0484	324.7	-0.316	36.0	0.133	54.2	41.83	5.599	46.43; local maximum rise or fall;
296	32.14	0.0474	358.5	-31.67	36.06	0.132	65.71	50.71	8.83	69.79; end overlap;
300	32.92	0.0471	367.2	-33.68	36.07	0.131	68.34	51.81	9.295	73.1;
305	34.52	0.0466	387.8	-34.61	36.09	0.125	73.71	53.92	10.24	79.81; trap level;
308	35.23	0.0463	408.0	-31.84	36.1	0.117	76.26	54.91	10.72	83.14; begin overlap;
363	36.42	0.0458	455.3	0.187	36.11	0.0978	78.16	58.23	12.35	94.59; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.56 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.65E-4	6071.8	1241.5	100.0	2273.8	0.0	0.0	1.00E-5	3.00E-4
1.10E-4	9049.9	1850.4	200.0	5051.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 23; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.001.db; Diffuser table record 11: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
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0.0	0.067	90.0	36.35	28.92	0.0	0.0	0.067	90.0	0.0003	23.13
3.048	0.0601	90.0	36.35	28.92	0.0	0.0	0.0601	90.0	0.0003	23.13
3.962	0.058	90.0	36.35	28.91	0.0	0.0	0.058	90.0	0.0003	23.13
4.877	0.0559	90.0	36.35	28.85	0.0	0.0	0.0559	90.0	0.0003	23.15
6.096	0.0531	90.0	36.36	28.78	0.0	0.0	0.0531	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0495	90.0	36.24	28.56	0.0	0.0	0.0495	90.0	0.0003	23.17
9.144	0.0481	90.0	36.29	28.5	0.0	0.0	0.0481	90.0	0.0003	23.22
10.06	0.047	90.0	36.38	28.13	0.0	0.0	0.047	90.0	0.0003	23.41
10.97	0.046	90.0	36.41	25.88	0.0	0.0	0.046	90.0	0.0003	24.16
12.7	0.044	90.0	36.47	25.57	0.0	0.0	0.044	90.0	0.0003	24.3
13.11	0.0359	90.0	36.42	25.33	0.0	0.0	0.0359	90.0	0.0003	24.34
14.02	0.018	90.0	36.43	25.05	0.0	0.0	0.018	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 78.38; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.07	0.0293	42.88	15.53	35.54	0.997	7.21	7.111	0.0692	1.283;
160	39.4	0.0447	139.0	18.76	36.17	0.311	23.64	22.34	1.044	11.41; acute zone;
185	35.47	0.0461	224.9	20.62	36.27	0.195	38.79	33.0	2.817	26.08; trap level;
198	33.92	0.0467	274.1	13.88	36.29	0.159	46.46	37.61	3.94	34.79; begin overlap;
200	33.83	0.0467	278.2	12.71	36.29	0.156	47.03	37.99	4.042	35.57;
223	33.46	0.0469	303.0	-0.557	36.3	0.143	50.6	41.3	4.988	42.73; local maximum rise or fall;
259	34.74	0.0465	329.8	-20.48	36.31	0.136	57.36	46.93	6.762	55.99; end overlap;
266	36.08	0.046	359.6	-21.96	36.32	0.125	63.77	50.04	7.9	64.35; trap level;
269	36.56	0.0458	377.7	-19.84	36.32	0.119	66.44	51.24	8.375	67.82; begin overlap;
300	37.95	0.0453	442.2	-2.208	36.34	0.101	75.97	57.56	11.14	87.8;
304	37.96	0.0453	446.5	0.0725	36.34	0.0997	76.75	58.25	11.46	90.14; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.34 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.67E-4	6002.6	1225.8	100.0	2275.1	0.0	0.0	1.00E-5	3.00E-4
1.11E-4	8945.4	1826.8	200.0	5052.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 24; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.001.db; Diffuser table record 12: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.35	28.92	0.0	0.0	0.067	90.0	0.0003	23.13
3.048	0.0601	90.0	36.35	28.92	0.0	0.0	0.0601	90.0	0.0003	23.13
3.962	0.058	90.0	36.35	28.91	0.0	0.0	0.058	90.0	0.0003	23.13
4.877	0.0559	90.0	36.35	28.85	0.0	0.0	0.0559	90.0	0.0003	23.15
6.096	0.0531	90.0	36.36	28.78	0.0	0.0	0.0531	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0495	90.0	36.24	28.56	0.0	0.0	0.0495	90.0	0.0003	23.17
9.144	0.0481	90.0	36.29	28.5	0.0	0.0	0.0481	90.0	0.0003	23.22
10.06	0.047	90.0	36.38	28.13	0.0	0.0	0.047	90.0	0.0003	23.41
10.97	0.046	90.0	36.41	25.88	0.0	0.0	0.046	90.0	0.0003	24.16
12.7	0.044	90.0	36.47	25.57	0.0	0.0	0.044	90.0	0.0003	24.3
13.11	0.0359	90.0	36.42	25.33	0.0	0.0	0.0359	90.0	0.0003	24.34
14.02	0.018	90.0	36.43	25.05	0.0	0.0	0.018	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -45.99; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.018	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	40.84	0.0442	43.78	43.76	39.69	0.975	7.349	5.246	0.0901	1.289;
174	31.12	0.0477	166.3	19.49	37.39	0.228	24.55	18.23	1.609	13.57; begin overlap;
200	30.51	0.0479	190.0	4.583	37.28	0.195	27.25	21.01	2.185	17.83;
209	30.49	0.0479	194.8	-0.567	37.26	0.19	27.9	21.86	2.374	19.21; local maximum rise or
fall;										
210	30.49	0.0479	195.3	-1.139	37.26	0.19	27.97	21.96	2.395	19.37; acute zone;
275	33.35	0.0469	216.5	-37.84	37.07	0.195	35.11	28.82	4.132	31.9; end overlap;
296	39.31	0.045	273.0	-44.27	36.89	0.163	47.79	34.8	6.209	46.48; trap level;
300	41.03	0.0444	295.3	-43.54	36.86	0.151	51.73	36.44	6.904	51.33;
308	44.36	0.0298	347.1	-39.83	36.8	0.126	59.79	39.81	8.505	62.51; bottom hit;
316	46.18	0.0179	383.0	-35.04	36.78	0.112	63.89	41.93	9.591	70.27; begin overlap;

```

377 49.42 -0.00249 456.0 0.245 36.76 0.0854 68.53 49.98 13.83 102.0; local maximum rise or
fall;
400 49.06-0.000556 455.0 13.38 36.75 0.0869 69.24 52.45 15.12 112.0;
449 44.24 0.027 435.3 40.86 36.73 0.103 75.42 59.85 19.05 143.1; end overlap;
459 39.67 0.0445 479.9 43.7 36.69 0.0969 87.5 64.04 21.5 163.2; trap level;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.19 m
conc dilutn width distnce time
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
1.52E-4 6579.2 1266.5 100.0 2205.9 0.0 0.0 1.00E-5 3.00E-4
1.01E-4 9888.9 1903.6 200.0 4983.6 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 25; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.002.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.35	28.92	0.0	0.0	0.134	90.0	0.0003	23.13
3.048	0.12	90.0	36.35	28.92	0.0	0.0	0.12	90.0	0.0003	23.13
3.962	0.116	90.0	36.35	28.91	0.0	0.0	0.116	90.0	0.0003	23.13
4.877	0.112	90.0	36.35	28.85	0.0	0.0	0.112	90.0	0.0003	23.15
6.096	0.106	90.0	36.36	28.78	0.0	0.0	0.106	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.099	90.0	36.24	28.56	0.0	0.0	0.099	90.0	0.0003	23.17
9.144	0.0962	90.0	36.29	28.5	0.0	0.0	0.0962	90.0	0.0003	23.22
10.06	0.0941	90.0	36.38	28.13	0.0	0.0	0.0941	90.0	0.0003	23.41
10.97	0.092	90.0	36.41	25.88	0.0	0.0	0.092	90.0	0.0003	24.16
12.7	0.088	90.0	36.47	25.57	0.0	0.0	0.088	90.0	0.0003	24.3
13.11	0.0718	90.0	36.42	25.33	0.0	0.0	0.0718	90.0	0.0003	24.34
14.02	0.0359	90.0	36.43	25.05	0.0	0.0	0.0359	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	28.0	1.0

Simulation:

```

Froude number: 12.58; effleunt density (sigma-T) 0.034; effleunt velocity 2.402(m/s);
Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time
Step (ft) (m/s) (in) (deg) (psu) (m/s) ( ) (ft) (ft) (s)
0 46.0 0.0359 6.0 15.0 5.0 2.402 1.0 0.0 0.0 0.0;

```

100	43.89	0.0605	40.46	28.97	32.09	0.369	7.096	5.596	0.301	2.86;
195	33.67	0.0935	165.0	49.45	35.76	0.146	46.42	13.64	5.03	24.08; trap level;
200	33.1	0.0939	177.4	46.94	35.81	0.137	50.45	13.89	5.474	25.74; begin overlap;
284	29.49	0.0965	269.3	-0.191	35.99	0.0915	76.77	16.68	12.52	50.93; local maximum rise or fall;
300	29.62	0.0964	269.8	-9.319	36.0	0.0927	77.91	17.14	13.88	55.71; acute zone;
334	31.19	0.0954	270.1	-28.1	36.03	0.104	87.14	18.42	17.87	69.65; end overlap;
348	33.65	0.0937	305.5	-29.31	36.11	0.105	113.9	19.47	21.99	83.82; trap level;
351	34.03	0.0934	315.4	-27.24	36.12	0.103	119.1	19.62	22.68	86.18; begin overlap;
398	35.14	0.0926	347.8	0.202	36.14	0.0915	128.0	20.42	26.63	99.62; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.83 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
8.78E-5	11390.4	1086.5	100.0	2493.6	0.0	0.0	1.00E-5	3.00E-4
6.04E-5	16560.6	1579.6	200.0	5271.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 26; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.002.db; Diffuser table record 2: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.134	90.0	36.35	28.92	0.0	0.0	0.134	90.0	0.0003	23.13
3.048	0.12	90.0	36.35	28.92	0.0	0.0	0.12	90.0	0.0003	23.13
3.962	0.116	90.0	36.35	28.91	0.0	0.0	0.116	90.0	0.0003	23.13
4.877	0.112	90.0	36.35	28.85	0.0	0.0	0.112	90.0	0.0003	23.15
6.096	0.106	90.0	36.36	28.78	0.0	0.0	0.106	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.099	90.0	36.24	28.56	0.0	0.0	0.099	90.0	0.0003	23.17
9.144	0.0962	90.0	36.29	28.5	0.0	0.0	0.0962	90.0	0.0003	23.22
10.06	0.0941	90.0	36.38	28.13	0.0	0.0	0.0941	90.0	0.0003	23.41
10.97	0.092	90.0	36.41	25.88	0.0	0.0	0.092	90.0	0.0003	24.16
12.7	0.088	90.0	36.47	25.57	0.0	0.0	0.088	90.0	0.0003	24.3
13.11	0.0718	90.0	36.42	25.33	0.0	0.0	0.0718	90.0	0.0003	24.34
14.02	0.0359	90.0	36.43	25.05	0.0	0.0	0.0359	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	28.0	1.0

Simulation:

Froude number: 15.15; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	44.03	0.059	41.26	25.19	33.47	0.357	7.141	5.713	0.308	2.937;
199	34.6	0.0929	185.9	42.14	36.01	0.125	50.49	14.79	5.885	28.02; trap level;
200	34.5	0.0929	188.4	41.66	36.02	0.124	51.36	14.84	5.985	28.39; begin overlap;
274	32.07	0.0947	254.3	-0.256	36.11	0.0907	67.87	17.04	10.99	46.68; local maximum rise or fall;
300	32.31	0.0946	252.4	-15.07	36.11	0.0939	68.99	17.65	12.54	52.28;
306	32.44	0.0945	251.0	-18.47	36.11	0.0956	69.43	17.81	12.94	53.73; acute zone;
331	33.79	0.0936	249.0	-31.86	36.14	0.106	76.1	18.74	15.43	62.66; end overlap;
337	34.74	0.0929	264.5	-31.0	36.16	0.105	85.71	19.21	16.88	67.84; trap level;
339	34.98	0.0927	270.8	-29.75	36.17	0.104	88.7	19.33	17.27	69.22; begin overlap;
391	36.38	0.0917	310.5	0.367	36.2	0.09	100.4	20.57	21.83	85.19; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.89 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.07E-4	9337.5	1013.5	100.0	2523.8	0.0	0.0	1.00E-5	3.00E-4
7.39E-5	13533.0	1468.9	200.0	5301.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 27; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.002.db; Diffuser table record 3: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.134	90.0	36.35	28.92	0.0	0.0	0.134	90.0	0.0003	23.13
3.048	0.12	90.0	36.35	28.92	0.0	0.0	0.12	90.0	0.0003	23.13
3.962	0.116	90.0	36.35	28.91	0.0	0.0	0.116	90.0	0.0003	23.13
4.877	0.112	90.0	36.35	28.85	0.0	0.0	0.112	90.0	0.0003	23.15
6.096	0.106	90.0	36.36	28.78	0.0	0.0	0.106	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.099	90.0	36.24	28.56	0.0	0.0	0.099	90.0	0.0003	23.17
9.144	0.0962	90.0	36.29	28.5	0.0	0.0	0.0962	90.0	0.0003	23.22
10.06	0.0941	90.0	36.38	28.13	0.0	0.0	0.0941	90.0	0.0003	23.41
10.97	0.092	90.0	36.41	25.88	0.0	0.0	0.092	90.0	0.0003	24.16
12.7	0.088	90.0	36.47	25.57	0.0	0.0	0.088	90.0	0.0003	24.3
13.11	0.0718	90.0	36.42	25.33	0.0	0.0	0.0718	90.0	0.0003	24.34

14.02	0.0359	90.0	36.43	25.05	0.0	0.0	0.0359	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 26.13; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.26	0.0563	42.39	18.61	35.54	0.341	7.21	5.888	0.319	3.052;
185	39.66	0.0894	169.3	25.65	36.27	0.108	36.03	15.05	4.487	24.18; begin overlap;
198	38.84	0.0899	197.7	23.68	36.3	0.1	45.62	16.11	5.911	29.94; end overlap;
200	38.71	0.09	202.5	23.29	36.31	0.0995	47.37	16.28	6.17	30.96;
222	37.1	0.0911	261.4	17.44	36.35	0.0921	72.95	18.17	10.1	45.92; trap level;
228	36.63	0.0915	279.3	15.39	36.36	0.0909	82.15	18.71	11.61	51.52; acute zone;
242	35.62	0.0922	321.7	8.862	36.37	0.0888	106.4	20.0	16.07	67.66; begin overlap;
258	35.4	0.0924	333.8	-0.443	36.37	0.0878	113.2	20.7	18.93	77.9; local maximum rise or fall;
276	35.82	0.0921	341.6	-10.22	36.38	0.0894	120.4	21.54	22.56	90.8; end overlap;
282	36.47	0.0917	359.3	-10.69	36.38	0.0897	134.0	22.22	25.84	102.4; trap level;
300	37.95	0.0906	422.7	-2.194	36.39	0.0887	183.3	24.3	38.42	146.4;
301	37.97	0.0906	425.0	-1.629	36.39	0.0887	185.3	24.4	39.13	148.8; bottom hit;
304	37.99	0.0906	431.1	0.0614	36.39	0.0887	190.5	24.69	41.26	156.2; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.95 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
6.50E-5	15389.8	1222.3	100.0	2370.6	0.0	0.0	1.00E-5	3.00E-4
4.41E-5	22679.1	1801.3	200.0	5148.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 28; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.002.db; Diffuser table record 4: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.134	90.0	36.35	28.92	0.0	0.0	0.134	90.0	0.0003	23.13
3.048	0.12	90.0	36.35	28.92	0.0	0.0	0.12	90.0	0.0003	23.13

3.962	0.116	90.0	36.35	28.91	0.0	0.0	0.116	90.0	0.0003	23.13
4.877	0.112	90.0	36.35	28.85	0.0	0.0	0.112	90.0	0.0003	23.15
6.096	0.106	90.0	36.36	28.78	0.0	0.0	0.106	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.099	90.0	36.24	28.56	0.0	0.0	0.099	90.0	0.0003	23.17
9.144	0.0962	90.0	36.29	28.5	0.0	0.0	0.0962	90.0	0.0003	23.22
10.06	0.0941	90.0	36.38	28.13	0.0	0.0	0.0941	90.0	0.0003	23.41
10.97	0.092	90.0	36.41	25.88	0.0	0.0	0.092	90.0	0.0003	24.16
12.7	0.088	90.0	36.47	25.57	0.0	0.0	0.088	90.0	0.0003	24.3
13.11	0.0718	90.0	36.42	25.33	0.0	0.0	0.0718	90.0	0.0003	24.34
14.02	0.0359	90.0	36.43	25.05	0.0	0.0	0.0359	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	28.0	1.0

Simulation:

Froude number: -15.33; effleunt density (sigma-T) 41.53; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	42.1	0.0819	46.18	34.34	39.68	0.291	7.349	4.391	0.406	3.108;
129	41.07	0.0884	73.41	20.29	38.57	0.178	11.21	6.25	1.002	6.154; begin overlap;
167	40.71	0.0887	95.24	-0.0192	38.09	0.138	14.52	8.006	1.902	10.19; local maximum rise or fall;
200	41.0	0.0885	105.5	-18.14	37.86	0.132	16.95	9.461	2.851	14.24;
233	42.19	0.0823	120.8	-34.82	37.52	0.132	22.33	11.18	4.288	20.11; end overlap;
269	47.23	0.0244	158.2	-52.36	37.06	0.134	38.7	14.21	8.25	36.51; bottom hit;
300	55.93	-0.0811	213.6	-69.34	36.84	0.115	61.43	16.99	12.35	59.67; begin overlap;
326	59.56	-0.125	266.2	-76.91	36.75	0.0962	79.23	17.88	12.83	70.76; acute zone;
388	65.67	-0.199	336.6	-52.6	36.67	0.0882	115.4	19.22	10.85	93.52; trap level;
400	66.68	-0.211	343.5	-46.11	36.66	0.0907	123.4	19.44	9.996	98.09;
456	71.38	-0.267	357.1	-15.28	36.6	0.131	191.6	20.51	1.169	126.9; end overlap;
489	73.87	-0.298	391.8	0.129	36.57	0.199	350.2	21.66	-29.3	181.1; local maximum rise or fall;
500	73.23	-0.291	416.7	2.721	36.56	0.218	435.4	22.1	-50.51	211.9;
518	70.51	-0.26	477.6	3.304	36.55	0.236	621.8	22.75	-96.26	272.7; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.13 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.28E-5	43919.0	1184.1	100.0	1940.3	0.0	0.0	1.00E-5	3.00E-4
1.46E-5	68483.1	1846.4	200.0	4718.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 29; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.002.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.35	28.92	0.0	0.0	0.134	90.0	0.0003	23.13
3.048	0.12	90.0	36.35	28.92	0.0	0.0	0.12	90.0	0.0003	23.13
3.962	0.116	90.0	36.35	28.91	0.0	0.0	0.116	90.0	0.0003	23.13
4.877	0.112	90.0	36.35	28.85	0.0	0.0	0.112	90.0	0.0003	23.15
6.096	0.106	90.0	36.36	28.78	0.0	0.0	0.106	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.099	90.0	36.24	28.56	0.0	0.0	0.099	90.0	0.0003	23.17
9.144	0.0962	90.0	36.29	28.5	0.0	0.0	0.0962	90.0	0.0003	23.22
10.06	0.0941	90.0	36.38	28.13	0.0	0.0	0.0941	90.0	0.0003	23.41
10.97	0.092	90.0	36.41	25.88	0.0	0.0	0.092	90.0	0.0003	24.16
12.7	0.088	90.0	36.47	25.57	0.0	0.0	0.088	90.0	0.0003	24.3
13.11	0.0718	90.0	36.42	25.33	0.0	0.0	0.0718	90.0	0.0003	24.34
14.02	0.0359	90.0	36.43	25.05	0.0	0.0	0.0359	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 25.16; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0359	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	44.07	0.0585	42.06	19.47	32.09	0.681	7.096	6.422	0.181	1.701;
190	33.39	0.0936	197.2	43.46	35.7	0.184	42.06	21.43	4.733	22.33; trap level;
191	33.2	0.0938	200.7	43.15	35.71	0.181	42.9	21.59	4.856	22.8; acute zone;
200	31.87	0.0948	231.9	39.31	35.8	0.158	49.76	22.77	5.826	26.47;
201	31.75	0.0948	235.0	38.86	35.81	0.156	50.45	22.87	5.923	26.83; begin overlap;
273	28.15	0.0974	348.6	-0.401	35.97	0.106	74.31	28.91	13.25	53.17; local maximum rise or fall;
300	28.72	0.0971	355.4	-15.66	35.98	0.108	78.91	31.03	16.35	64.06;
325	30.91	0.0956	373.7	-28.7	36.03	0.115	92.85	33.65	20.64	79.0; end overlap;
338	33.61	0.0938	431.7	-27.8	36.1	0.11	119.7	35.73	24.98	93.82; trap level;

339 33.75 0.0936 436.4 -27.15 36.11 0.109 121.3 35.84 25.24 94.7; begin overlap, matched
 energy radial vel = 0.0295m/s;
 386 35.0 0.0927 479.3 0.45 36.12 0.0967 128.5 37.48 29.35 108.6; local maximum rise or
 fall;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.17 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 9.97E-5 10026.4 1313.0 100.0 2374.7 0.0 0.0 1.00E-5 3.00E-4
 6.77E-5 14768.5 1934.1 200.0 5152.5 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 30; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.002.db; Diffuser table record 6: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.35	28.92	0.0	0.0	0.134	90.0	0.0003	23.13
3.048	0.12	90.0	36.35	28.92	0.0	0.0	0.12	90.0	0.0003	23.13
3.962	0.116	90.0	36.35	28.91	0.0	0.0	0.116	90.0	0.0003	23.13
4.877	0.112	90.0	36.35	28.85	0.0	0.0	0.112	90.0	0.0003	23.15
6.096	0.106	90.0	36.36	28.78	0.0	0.0	0.106	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.099	90.0	36.24	28.56	0.0	0.0	0.099	90.0	0.0003	23.17
9.144	0.0962	90.0	36.29	28.5	0.0	0.0	0.0962	90.0	0.0003	23.22
10.06	0.0941	90.0	36.38	28.13	0.0	0.0	0.0941	90.0	0.0003	23.41
10.97	0.092	90.0	36.41	25.88	0.0	0.0	0.092	90.0	0.0003	24.16
12.7	0.088	90.0	36.47	25.57	0.0	0.0	0.088	90.0	0.0003	24.3
13.11	0.0718	90.0	36.42	25.33	0.0	0.0	0.0718	90.0	0.0003	24.34
14.02	0.0359	90.0	36.43	25.05	0.0	0.0	0.0359	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	28.0	1.0

Simulation:

Froude number: 30.3; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0359	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	44.12	0.058	42.36	18.14	33.47	0.675	7.141	6.48	0.183	1.719;

186	35.46	0.0922	194.3	37.94	35.9	0.177	39.14	21.6	4.494	21.74; acute zone;
192	34.43	0.0929	214.1	37.4	35.95	0.164	44.08	22.69	5.273	24.77; trap level;
199	33.49	0.0936	238.5	34.56	36.0	0.149	49.5	23.68	6.092	27.9; begin overlap;
200	33.39	0.0937	241.4	34.07	36.01	0.147	50.11	23.79	6.189	28.26;
261	31.22	0.0953	312.4	-0.203	36.08	0.111	62.59	28.24	10.84	45.44; local maximum rise or fall;
300	32.1	0.0947	314.3	-22.24	36.09	0.117	66.73	30.84	13.92	56.64;
318	33.79	0.0936	327.3	-31.07	36.13	0.122	75.77	32.77	16.44	65.74; end overlap;
322	34.53	0.0931	344.1	-30.34	36.15	0.119	82.02	33.46	17.48	69.41; trap level;
324	34.8	0.0929	352.8	-29.27	36.15	0.117	84.59	33.72	17.88	70.84; begin overlap;
375	36.32	0.0917	402.7	0.269	36.18	0.0996	93.41	36.24	22.21	86.09; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.23 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.28E-4	7795.1	1179.7	100.0	2417.9	0.0	0.0	1.00E-5	3.00E-4
8.75E-5	11426.5	1729.3	200.0	5195.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 31; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.002.db; Diffuser table record 7: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.134	90.0	36.35	28.92	0.0	0.0	0.134	90.0	0.0003	23.13
3.048	0.12	90.0	36.35	28.92	0.0	0.0	0.12	90.0	0.0003	23.13
3.962	0.116	90.0	36.35	28.91	0.0	0.0	0.116	90.0	0.0003	23.13
4.877	0.112	90.0	36.35	28.85	0.0	0.0	0.112	90.0	0.0003	23.15
6.096	0.106	90.0	36.36	28.78	0.0	0.0	0.106	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.099	90.0	36.24	28.56	0.0	0.0	0.099	90.0	0.0003	23.17
9.144	0.0962	90.0	36.29	28.5	0.0	0.0	0.0962	90.0	0.0003	23.22
10.06	0.0941	90.0	36.38	28.13	0.0	0.0	0.0941	90.0	0.0003	23.41
10.97	0.092	90.0	36.41	25.88	0.0	0.0	0.092	90.0	0.0003	24.16
12.7	0.088	90.0	36.47	25.57	0.0	0.0	0.088	90.0	0.0003	24.3
13.11	0.0718	90.0	36.42	25.33	0.0	0.0	0.0718	90.0	0.0003	24.34
14.02	0.0359	90.0	36.43	25.05	0.0	0.0	0.0359	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
---------------	----------------	------------------	------------------	--------------	-----------------	----------------	-----------------	------------------	------------------	-------------	--------------------

6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 2.0 30.0 28.0 1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.19	0.0571	42.79	16.05	35.54	0.668	7.21	6.566	0.185	1.745;
181	38.69	0.09	195.6	21.48	36.26	0.16	35.83	21.84	4.153	20.96; acute zone;
200	36.86	0.0913	262.6	20.29	36.31	0.128	51.38	25.66	6.922	31.93;
207	36.26	0.0917	288.6	19.16	36.33	0.12	58.15	26.89	8.097	36.4; trap level;
214	35.69	0.0921	315.1	17.54	36.34	0.113	65.52	28.04	9.362	41.14; begin overlap;
247	34.77	0.0928	362.4	-0.483	36.35	0.102	77.85	31.26	13.61	56.74; local maximum rise or fall;
276	35.68	0.0922	382.3	-15.71	36.35	0.103	87.64	34.1	17.82	72.02; end overlap;
280	36.13	0.0919	400.2	-15.35	36.36	0.102	94.73	34.91	19.2	76.98; trap level;
282	36.31	0.0918	409.4	-14.48	36.36	0.101	98.02	35.25	19.8	79.12; begin overlap;
298	37.35	0.091	472.2	-7.197	36.37	0.0951	122.9	37.65	24.77	96.73; matched energy radial
vel = 0.0251m/s;										
299	37.39	0.091	475.7	-6.701	36.37	0.0949	124.5	37.8	25.12	97.96; bottom hit, matched
energy radial vel = 0.0251m/s;										
300	37.43	0.091	479.3	-6.202	36.37	0.0947	126.0	37.94	25.47	99.19;
308	37.65	0.0908	505.9	-2.111	36.38	0.0933	138.3	39.14	28.46	109.7; matched energy radial
vel = 0.0261m/s;										
309	37.66	0.0908	509.0	-1.59	36.38	0.0932	139.8	39.29	28.86	111.1; end overlap, matched
energy radial vel = 0.0262m/s;										
313	37.67	0.0908	520.8	0.51	36.38	0.0928	145.7	39.91	30.53	116.9; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.23 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
9.08E-5	11006.5	1381.1	100.0	2352.3	0.0	0.0	1.00E-5	3.00E-4
6.15E-5	16253.6	2039.6	200.0	5130.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 32; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.002.db; Diffuser table record 8: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.134	90.0	36.35	28.92	0.0	0.0	0.134	90.0	0.0003	23.13
3.048	0.12	90.0	36.35	28.92	0.0	0.0	0.12	90.0	0.0003	23.13

3.962	0.116	90.0	36.35	28.91	0.0	0.0	0.116	90.0	0.0003	23.13
4.877	0.112	90.0	36.35	28.85	0.0	0.0	0.112	90.0	0.0003	23.15
6.096	0.106	90.0	36.36	28.78	0.0	0.0	0.106	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.099	90.0	36.24	28.56	0.0	0.0	0.099	90.0	0.0003	23.17
9.144	0.0962	90.0	36.29	28.5	0.0	0.0	0.0962	90.0	0.0003	23.22
10.06	0.0941	90.0	36.38	28.13	0.0	0.0	0.0941	90.0	0.0003	23.41
10.97	0.092	90.0	36.41	25.88	0.0	0.0	0.092	90.0	0.0003	24.16
12.7	0.088	90.0	36.47	25.57	0.0	0.0	0.088	90.0	0.0003	24.3
13.11	0.0718	90.0	36.42	25.33	0.0	0.0	0.0718	90.0	0.0003	24.34
14.02	0.0359	90.0	36.43	25.05	0.0	0.0	0.0359	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -30.66; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	41.38	0.0881	44.14	42.33	39.69	0.639	7.349	4.764	0.232	1.713;
163	35.98	0.0919	142.3	20.53	37.52	0.187	22.11	12.36	2.501	11.31; begin overlap;
200	35.31	0.0924	179.1	0.314	37.29	0.149	27.7	15.38	4.275	18.04;
201	35.31	0.0924	179.7	-0.246	37.29	0.148	27.81	15.46	4.323	18.22; local maximum rise or fall;
258	37.44	0.091	222.3	-30.28	37.02	0.14	40.05	20.51	8.3	32.82; acute zone, end overlap;
293	43.91	0.0646	321.0	-39.41	36.75	0.125	75.18	25.52	15.28	57.59; bottom hit;
300	46.75	0.0332	354.2	-39.82	36.71	0.118	86.36	27.07	18.33	68.78;
304	49.58	0.00324	379.3	-39.55	36.69	0.11	93.48	28.56	21.4	80.77; trap level;
318	56.46	-0.0867	551.7	-35.51	36.63	0.067	122.3	32.58	29.26	118.3; begin overlap;
381	59.07	-0.121	753.9	0.234	36.62	0.0412	135.5	36.2	34.3	160.3; local maximum rise or fall;
400	58.96	-0.119	757.5	11.09	36.62	0.0411	136.3	36.9	35.18	168.7;
489	50.72	-0.0263	735.4	59.24	36.59	0.0513	161.6	42.82	41.0	245.0; matched energy radial vel = 0.0155m/s;
491	49.34	-0.0136	752.0	59.67	36.59	0.0499	165.9	43.48	41.45	254.7; trap level, end overlap;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 19.10 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
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9.18E-5 10892.8 1733.1 100.0 2269.1 0.0 0.0 1.00E-5 3.00E-4
 6.16E-5 16244.5 2584.6 200.0 5046.9 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 33; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.002.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.35	28.92	0.0	0.0	0.134	90.0	0.0003	23.13
3.048	0.12	90.0	36.35	28.92	0.0	0.0	0.12	90.0	0.0003	23.13
3.962	0.116	90.0	36.35	28.91	0.0	0.0	0.116	90.0	0.0003	23.13
4.877	0.112	90.0	36.35	28.85	0.0	0.0	0.112	90.0	0.0003	23.15
6.096	0.106	90.0	36.36	28.78	0.0	0.0	0.106	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.099	90.0	36.24	28.56	0.0	0.0	0.099	90.0	0.0003	23.17
9.144	0.0962	90.0	36.29	28.5	0.0	0.0	0.0962	90.0	0.0003	23.22
10.06	0.0941	90.0	36.38	28.13	0.0	0.0	0.0941	90.0	0.0003	23.41
10.97	0.092	90.0	36.41	25.88	0.0	0.0	0.092	90.0	0.0003	24.16
12.7	0.088	90.0	36.47	25.57	0.0	0.0	0.088	90.0	0.0003	24.3
13.11	0.0718	90.0	36.42	25.33	0.0	0.0	0.0718	90.0	0.0003	24.34
14.02	0.0359	90.0	36.43	25.05	0.0	0.0	0.0359	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

Froude number: 37.74; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0359	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.1	0.0582	42.36	17.13	32.09	1.006	7.096	6.717	0.128	1.2;
173	37.04	0.0911	164.7	32.92	35.42	0.283	30.04	22.06	2.55	13.01; acute zone;
190	33.46	0.0936	219.1	36.4	35.7	0.223	42.06	26.7	4.432	20.51; trap level;
200	31.51	0.095	262.2	32.69	35.81	0.187	50.39	29.17	5.792	25.68;
207	30.59	0.0957	289.2	29.45	35.86	0.17	55.46	30.47	6.621	28.76; begin overlap;
262	27.88	0.0976	399.2	-0.337	35.97	0.124	76.37	38.04	13.01	51.65; local maximum rise or
fall;										
300	29.46	0.0966	428.0	-21.38	36.01	0.125	88.48	43.2	18.43	70.61;


```

312    31.03  0.0956  450.7  -27.14  36.04  0.126  98.98  45.35  21.05  79.64; end overlap;
323    33.6   0.0938  513.5  -27.08  36.1   0.119  122.0  48.1   25.05  93.26; trap level;
324    33.79  0.0936  520.0  -26.4   36.11  0.118  123.9  48.29  25.37  94.32; begin overlap, matched
energy radial vel = 0.0377m/s;
369    35.09  0.0926  569.5   0.078  36.12  0.104  130.3  50.68  29.43  108.1; local maximum rise or
fall;

```

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.47 m

```

conc dilutn width distance time
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
1.06E-4 9408.3 1443.8 100.0 2281.6 0.0 0.0 1.00E-5 3.00E-4
7.14E-5 14009.6 2149.9 200.0 5059.4 0.0 0.0 1.00E-5 3.00E-4
count: 2

```

/ UM3.

Case 34; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.002.db; Diffuser table record 10: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.35	28.92	0.0	0.0	0.134	90.0	0.0003	23.13
3.048	0.12	90.0	36.35	28.92	0.0	0.0	0.12	90.0	0.0003	23.13
3.962	0.116	90.0	36.35	28.91	0.0	0.0	0.116	90.0	0.0003	23.13
4.877	0.112	90.0	36.35	28.85	0.0	0.0	0.112	90.0	0.0003	23.15
6.096	0.106	90.0	36.36	28.78	0.0	0.0	0.106	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.099	90.0	36.24	28.56	0.0	0.0	0.099	90.0	0.0003	23.17
9.144	0.0962	90.0	36.29	28.5	0.0	0.0	0.0962	90.0	0.0003	23.22
10.06	0.0941	90.0	36.38	28.13	0.0	0.0	0.0941	90.0	0.0003	23.41
10.97	0.092	90.0	36.41	25.88	0.0	0.0	0.092	90.0	0.0003	24.16
12.7	0.088	90.0	36.47	25.57	0.0	0.0	0.088	90.0	0.0003	24.3
13.11	0.0718	90.0	36.42	25.33	0.0	0.0	0.0718	90.0	0.0003	24.34
14.02	0.0359	90.0	36.43	25.05	0.0	0.0	0.0359	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

```

Froude number:      45.45; effleunt density (sigma-T)      7.486; effleunt velocity      7.205(m/s);
  Depth  Amb-cur  P-dia  V-angle  Eff-sal  P-speed  Dilutn  x-posn  y-posn  Time
Step    (ft)    (m/s)   (in)   (deg)   (psu)   (m/s)   ( )    (ft)   (ft)   (s)

```

```

0      46.0  0.0359   6.0   15.0   15.0   7.205   1.0   0.0   0.0   0.0;
100    44.12 0.058   42.56 16.49 33.47  1.003   7.141  6.762  0.129  1.208;
171    38.07 0.0904  163.7  27.36 35.72  0.277  29.09  21.98   2.44  12.66; acute zone;
192    34.29 0.093   235.1  31.05 35.95  0.203  44.08  28.04  4.897  22.51; trap level;
200    33.0  0.094   269.4  27.77 36.01  0.178  50.55  30.03  6.003  26.72;
202    32.8  0.0941  276.2  26.74 36.02  0.174  51.74  30.37  6.206  27.49; begin overlap;
251    30.92 0.0955  353.9  -0.466 36.08  0.135  65.07  36.46  10.59  43.63; local maximum rise or
fall;
300    33.36 0.0939  387.3  -27.19 36.13  0.137  79.28  42.76  16.11  63.5;
302    33.69 0.0937  393.7  -27.81 36.14  0.136  81.58  43.21  16.57  65.09; end overlap;
306    34.54 0.0931  415.3  -27.32 36.16  0.131  88.12  44.31  17.75  69.29; trap level;
307    34.71 0.093   421.2  -26.78 36.16  0.129   89.6  44.53  18.01  70.17; matched energy radial
vel = 0.0327m/s;
308    34.85 0.0929  426.3  -26.22 36.16  0.128  90.71  44.71  18.21  70.89; begin overlap;
354    36.24 0.0918  476.8   0.507 36.18  0.112  97.97  48.06  22.28  85.15; local maximum rise or
fall;

```

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.11 m

```

      conc dilutn  width distnce  time
      (kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
1.32E-4  7585.4  1295.9  100.0  2329.2  0.0    0.0 1.00E-5 3.00E-4
8.90E-5 11231.6 1918.8  200.0  5107.0  0.0    0.0 1.00E-5 3.00E-4
count: 2

```

/ UM3.

Case 35; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.002.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.35	28.92	0.0	0.0	0.134	90.0	0.0003	23.13
3.048	0.12	90.0	36.35	28.92	0.0	0.0	0.12	90.0	0.0003	23.13
3.962	0.116	90.0	36.35	28.91	0.0	0.0	0.116	90.0	0.0003	23.13
4.877	0.112	90.0	36.35	28.85	0.0	0.0	0.112	90.0	0.0003	23.15
6.096	0.106	90.0	36.36	28.78	0.0	0.0	0.106	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.099	90.0	36.24	28.56	0.0	0.0	0.099	90.0	0.0003	23.17
9.144	0.0962	90.0	36.29	28.5	0.0	0.0	0.0962	90.0	0.0003	23.22
10.06	0.0941	90.0	36.38	28.13	0.0	0.0	0.0941	90.0	0.0003	23.41
10.97	0.092	90.0	36.41	25.88	0.0	0.0	0.092	90.0	0.0003	24.16
12.7	0.088	90.0	36.47	25.57	0.0	0.0	0.088	90.0	0.0003	24.3
13.11	0.0718	90.0	36.42	25.33	0.0	0.0	0.0718	90.0	0.0003	24.34
14.02	0.0359	90.0	36.43	25.05	0.0	0.0	0.0359	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 78.38; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.15	0.0577	42.87	15.49	35.54	0.998	7.21	6.83	0.131	1.221;
169	39.46	0.0895	163.7	18.43	36.22	0.269	28.26	22.05	2.343	12.43; acute zone;
200	35.84	0.092	286.1	18.33	36.31	0.163	52.2	31.79	6.589	29.39; trap level;
209	34.96	0.0926	326.8	15.22	36.33	0.146	60.54	34.16	8.162	35.32; begin overlap;
237	34.25	0.0932	373.7	-0.293	36.34	0.129	69.78	38.12	11.27	46.82; local maximum rise or fall;
268	35.39	0.0925	410.1	-16.39	36.34	0.125	81.43	42.73	15.43	61.96; end overlap;
272	35.88	0.0921	430.9	-16.46	36.35	0.121	87.49	43.88	16.63	66.28; trap level;
275	36.2	0.0919	447.5	-15.21	36.35	0.118	91.83	44.63	17.46	69.24; begin overlap;
281	36.65	0.0916	471.4	-12.42	36.35	0.114	98.03	45.83	18.88	74.3; matched energy radial
vel = 0.0305m/s;										
282	36.71	0.0915	475.2	-11.94	36.36	0.113	99.02	46.03	19.13	75.17; matched energy radial
vel = 0.0305m/s;										
283	36.78	0.0915	478.8	-11.44	36.36	0.113	100.0	46.23	19.37	76.04; matched energy radial
vel = 0.0305m/s;										
293	37.26	0.0911	511.6	-6.341	36.36	0.108	109.1	48.17	21.92	85.05; bottom hit;
300	37.43	0.091	530.4	-2.627	36.36	0.106	114.8	49.51	23.79	91.64;
305	37.46	0.0909	542.4	0.0587	36.37	0.104	118.7	50.45	25.18	96.54; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.78 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	Amb-sal (kg/kg)	Amb-tem (s-1)	Amb-pol (m/s)	Far-sp (m0.67/s2)
1.14E-4	8750.9	1403.3	100.0	2300.3	0.0	0.0	1.00E-5	3.00E-4
7.69E-5	13001.6	2085.0	200.0	5078.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 36; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.002.db; Diffuser table record 12: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-sp m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
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0.0	0.134	90.0	36.35	28.92	0.0	0.0	0.134	90.0	0.0003	23.13
3.048	0.12	90.0	36.35	28.92	0.0	0.0	0.12	90.0	0.0003	23.13
3.962	0.116	90.0	36.35	28.91	0.0	0.0	0.116	90.0	0.0003	23.13
4.877	0.112	90.0	36.35	28.85	0.0	0.0	0.112	90.0	0.0003	23.15
6.096	0.106	90.0	36.36	28.78	0.0	0.0	0.106	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.099	90.0	36.24	28.56	0.0	0.0	0.099	90.0	0.0003	23.17
9.144	0.0962	90.0	36.29	28.5	0.0	0.0	0.0962	90.0	0.0003	23.22
10.06	0.0941	90.0	36.38	28.13	0.0	0.0	0.0941	90.0	0.0003	23.41
10.97	0.092	90.0	36.41	25.88	0.0	0.0	0.092	90.0	0.0003	24.16
12.7	0.088	90.0	36.47	25.57	0.0	0.0	0.088	90.0	0.0003	24.3
13.11	0.0718	90.0	36.42	25.33	0.0	0.0	0.0718	90.0	0.0003	24.34
14.02	0.0359	90.0	36.43	25.05	0.0	0.0	0.0359	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -45.99; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	41.11	0.0883	43.72	43.78	39.69	0.977	7.349	4.957	0.165	1.2;
171	32.53	0.0943	169.7	24.52	37.33	0.234	26.31	15.7	2.715	11.54; begin overlap;
200	31.58	0.095	205.5	8.313	37.18	0.189	30.94	18.58	4.05	16.45;
215	31.48	0.0951	215.7	-0.191	37.14	0.181	32.45	19.88	4.716	18.87; local maximum rise or fall;
232	31.63	0.095	223.3	-9.814	37.11	0.177	34.01	21.31	5.495	21.68; acute zone;
276	33.95	0.0935	243.4	-33.92	36.97	0.182	41.72	25.77	8.239	31.45; end overlap;
292	37.13	0.0913	296.7	-36.23	36.83	0.16	54.99	29.1	10.95	40.91; trap level;
300	38.82	0.0901	338.1	-33.59	36.78	0.144	64.12	30.81	12.69	46.92;
309	40.38	0.089	383.7	-29.92	36.73	0.13	74.48	32.43	14.62	53.57; begin overlap;
315	41.25	0.0884	411.9	-27.19	36.71	0.123	81.02	33.4	15.92	58.04; bottom hit;
364	44.46	0.0543	527.8	0.038	36.65	0.0983	105.6	39.81	26.33	94.54; local maximum rise or fall;
400	42.56	0.0753	548.6	20.13	36.62	0.1	116.5	44.32	34.37	123.7;
403	42.04	0.0811	558.7	21.52	36.62	0.1	120.8	44.95	35.58	128.1; end overlap;
404	41.82	0.0834	563.2	21.93	36.62	0.1	122.7	45.19	36.06	129.9; matched energy radial
vel = 0.0281m/s;										
415	39.11	0.0896	635.6	21.56	36.59	0.0974	152.3	47.89	42.03	151.7; trap level;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.14 m										

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    conc  dilutn  width  distnce  time
(kg/kg)          (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
9.52E-5 10502.5 1538.6  100.0 2238.3   0.0    0.0 1.00E-5 3.00E-4
6.36E-5 15721.8 2303.2  200.0 5016.1   0.0    0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 37; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.003.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.35	28.92	0.0	0.0	0.201	90.0	0.0003	23.13
3.048	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.962	0.174	90.0	36.35	28.91	0.0	0.0	0.174	90.0	0.0003	23.13
4.877	0.168	90.0	36.35	28.85	0.0	0.0	0.168	90.0	0.0003	23.15
6.096	0.159	90.0	36.36	28.78	0.0	0.0	0.159	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.148	90.0	36.24	28.56	0.0	0.0	0.148	90.0	0.0003	23.17
9.144	0.144	90.0	36.29	28.5	0.0	0.0	0.144	90.0	0.0003	23.22
10.06	0.141	90.0	36.38	28.13	0.0	0.0	0.141	90.0	0.0003	23.41
10.97	0.138	90.0	36.41	25.88	0.0	0.0	0.138	90.0	0.0003	24.16
12.7	0.132	90.0	36.47	25.57	0.0	0.0	0.132	90.0	0.0003	24.3
13.11	0.108	90.0	36.42	25.33	0.0	0.0	0.108	90.0	0.0003	24.34
14.02	0.0539	90.0	36.43	25.05	0.0	0.0	0.0539	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	28.0	1.0

Simulation:

Froude number: 12.58; effleunt density (sigma-T) 0.034; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0539	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	44.11	0.087	40.53	27.57	32.09	0.368	7.096	5.158	0.402	2.594;
200	37.09	0.137	165.4	36.61	35.83	0.159	50.52	11.53	5.93	19.61;
222	34.76	0.139	211.9	30.2	36.04	0.15	78.09	12.5	9.287	27.91; trap level;
227	34.29	0.14	224.1	27.43	36.07	0.146	85.43	12.68	10.12	29.92; begin overlap;
276	32.58	0.142	272.4	-0.497	36.15	0.132	113.3	13.83	16.93	45.94; local maximum rise or fall;

278	32.58	0.142	272.7	-1.639	36.15	0.132	113.6	13.88	17.21	46.59; acute zone;
300	33.08	0.141	274.6	-14.1	36.16	0.137	118.8	14.37	20.53	54.32;
306	33.45	0.141	277.2	-17.27	36.16	0.139	123.1	14.55	21.78	57.23; end overlap;
315	34.74	0.139	296.3	-18.86	36.2	0.141	143.5	15.03	25.51	65.82; trap level;
322	35.45	0.139	315.3	-14.53	36.22	0.138	159.6	15.29	27.85	71.2; begin overlap;
348	36.06	0.138	335.2	0.508	36.23	0.134	174.5	15.78	32.74	82.35; local maximum rise or

fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.51 m

conc	dilutn	width	distnce	time						
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
6.39E-5	15649.9	1055.0	100.0	2470.1	0.0	0.0	1.00E-5	3.00E-4		
4.38E-5	22810.7	1537.7	200.0	5247.9	0.0	0.0	1.00E-5	3.00E-4		

count: 2

/ UM3.

Case 38; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.003.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.35	28.92	0.0	0.0	0.201	90.0	0.0003	23.13
3.048	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.962	0.174	90.0	36.35	28.91	0.0	0.0	0.174	90.0	0.0003	23.13
4.877	0.168	90.0	36.35	28.85	0.0	0.0	0.168	90.0	0.0003	23.15
6.096	0.159	90.0	36.36	28.78	0.0	0.0	0.159	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.148	90.0	36.24	28.56	0.0	0.0	0.148	90.0	0.0003	23.17
9.144	0.144	90.0	36.29	28.5	0.0	0.0	0.144	90.0	0.0003	23.22
10.06	0.141	90.0	36.38	28.13	0.0	0.0	0.141	90.0	0.0003	23.41
10.97	0.138	90.0	36.41	25.88	0.0	0.0	0.138	90.0	0.0003	24.16
12.7	0.132	90.0	36.47	25.57	0.0	0.0	0.132	90.0	0.0003	24.3
13.11	0.108	90.0	36.42	25.33	0.0	0.0	0.108	90.0	0.0003	24.34
14.02	0.0539	90.0	36.43	25.05	0.0	0.0	0.0539	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	28.0	1.0

Simulation:

Froude number: 15.15; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time

Step	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0539	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	44.23	0.085	41.25	24.07	33.47	0.357	7.141	5.254	0.411	2.656;
200	38.43	0.135	169.1	30.24	36.01	0.146	48.49	11.98	5.915	20.13;
233	35.31	0.139	240.0	22.44	36.21	0.14	93.19	13.62	12.02	35.27; trap level;
241	34.64	0.139	259.6	17.92	36.23	0.137	106.7	13.95	13.84	39.63; begin overlap;
257	33.96	0.14	280.7	8.729	36.25	0.132	120.9	14.38	16.69	46.34; acute zone;
273	33.79	0.14	288.1	-0.465	36.26	0.131	126.0	14.74	19.18	52.19; local maximum rise or fall;
295	34.32	0.14	293.1	-12.73	36.26	0.135	133.8	15.28	23.16	61.5; end overlap;
300	34.77	0.139	299.2	-15.18	36.27	0.137	141.2	15.5	24.91	65.6;
305	35.57	0.139	312.9	-15.22	36.28	0.137	155.8	15.83	27.74	72.15; trap level;
312	36.2	0.138	331.0	-10.8	36.29	0.135	171.9	16.11	30.45	78.39; begin overlap;
315	36.33	0.138	336.2	-9.116	36.3	0.135	176.6	16.19	31.26	80.26; end overlap;
332	36.7	0.137	356.0	0.501	36.31	0.134	195.7	16.67	36.54	92.37; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.04 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
5.85E-5	17089.7	1091.1	100.0	2437.7	0.0	0.0	1.00E-5	3.00E-4	
4.00E-5	24996.5	1596.0	200.0	5215.5	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 39; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.003.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.35	28.92	0.0	0.0	0.201	90.0	0.0003	23.13
3.048	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.962	0.174	90.0	36.35	28.91	0.0	0.0	0.174	90.0	0.0003	23.13
4.877	0.168	90.0	36.35	28.85	0.0	0.0	0.168	90.0	0.0003	23.15
6.096	0.159	90.0	36.36	28.78	0.0	0.0	0.159	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.148	90.0	36.24	28.56	0.0	0.0	0.148	90.0	0.0003	23.17
9.144	0.144	90.0	36.29	28.5	0.0	0.0	0.144	90.0	0.0003	23.22
10.06	0.141	90.0	36.38	28.13	0.0	0.0	0.141	90.0	0.0003	23.41
10.97	0.138	90.0	36.41	25.88	0.0	0.0	0.138	90.0	0.0003	24.16
12.7	0.132	90.0	36.47	25.57	0.0	0.0	0.132	90.0	0.0003	24.3
13.11	0.108	90.0	36.42	25.33	0.0	0.0	0.108	90.0	0.0003	24.34
14.02	0.0539	90.0	36.43	25.05	0.0	0.0	0.0539	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 26.13; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.42	0.0817	42.27	18.1	35.54	0.343	7.21	5.399	0.424	2.749;
156	42.34	0.119	108.8	21.99	36.12	0.152	20.94	10.46	2.516	11.3; begin overlap;
198	40.81	0.133	168.4	17.34	36.29	0.128	41.89	13.01	5.823	21.44; end overlap;
200	40.72	0.133	172.0	16.97	36.3	0.127	43.56	13.14	6.079	22.15;
238	38.57	0.135	251.1	9.86	36.38	0.127	92.45	15.8	15.15	45.61; trap level;
239	38.5	0.135	253.5	9.652	36.38	0.127	94.3	15.88	15.54	46.59; acute zone;
269	36.75	0.137	337.8	-0.0044	36.4	0.13	170.8	18.95	38.18	101.0; local maximum rise or fall;
286	38.25	0.136	395.8	-4.013	36.41	0.132	238.6	21.3	65.0	163.9; trap level;
288	38.48	0.135	403.6	-3.627	36.41	0.132	248.2	21.55	68.44	171.9; bottom hit;
297	39.0	0.135	438.0	0.533	36.41	0.132	292.9	22.84	88.64	218.7; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.12 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
4.62E-5	21630.1	1135.5	100.0	2002.7	0.0	0.0	1.00E-5	3.00E-4
2.99E-5	33417.3	1754.3	200.0	4780.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 40; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.003.db; Diffuser table record 4: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.201	90.0	36.35	28.92	0.0	0.0	0.201	90.0	0.0003	23.13
3.048	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.962	0.174	90.0	36.35	28.91	0.0	0.0	0.174	90.0	0.0003	23.13
4.877	0.168	90.0	36.35	28.85	0.0	0.0	0.168	90.0	0.0003	23.15
6.096	0.159	90.0	36.36	28.78	0.0	0.0	0.159	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.148	90.0	36.24	28.56	0.0	0.0	0.148	90.0	0.0003	23.17

9.144	0.144	90.0	36.29	28.5	0.0	0.0	0.144	90.0	0.0003	23.22
10.06	0.141	90.0	36.38	28.13	0.0	0.0	0.141	90.0	0.0003	23.41
10.97	0.138	90.0	36.41	25.88	0.0	0.0	0.138	90.0	0.0003	24.16
12.7	0.132	90.0	36.47	25.57	0.0	0.0	0.132	90.0	0.0003	24.3
13.11	0.108	90.0	36.42	25.33	0.0	0.0	0.108	90.0	0.0003	24.34
14.02	0.0539	90.0	36.43	25.05	0.0	0.0	0.0539	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	28.0	1.0

Simulation:

Froude number: -15.33; effleunt density (sigma-T) 41.53; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	42.46	0.117	45.4	35.13	39.68	0.302	7.349	3.914	0.509	2.695;
122	41.72	0.13	65.17	26.38	38.72	0.21	10.45	5.05	1.004	4.476; begin overlap;
179	41.03	0.133	102.4	-0.211	37.8	0.145	17.67	7.351	2.928	10.24; local maximum rise or fall;
200	41.18	0.133	113.3	-10.62	37.59	0.141	20.96	8.266	4.052	13.36;
218	41.6	0.132	127.1	-18.27	37.37	0.14	26.22	9.127	5.384	16.92; end overlap;
260	45.67	0.0635	195.4	-32.02	36.85	0.133	59.08	11.86	13.02	37.05; bottom hit;
272	49.27	0.00117	221.7	-38.37	36.77	0.127	72.27	13.1	17.92	51.7; acute zone;
289	54.11	-0.0887	279.6	-48.37	36.7	0.101	92.75	14.4	22.97	70.25; begin overlap;
300	55.69	-0.118	319.5	-54.41	36.68	0.0864	103.3	14.78	24.17	76.91;
326	58.51	-0.169	391.3	-67.69	36.65	0.0672	120.0	15.44	25.59	89.95; trap level;
400	63.59	-0.261	501.7	-61.68	36.62	0.05	145.7	16.67	25.5	119.0;
500	67.45	-0.331	452.9	-7.396	36.59	0.0775	181.1	18.19	18.79	162.3;
514	67.65	-0.335	414.2	-0.2	36.58	0.107	205.4	18.57	14.95	175.1; end overlap;
515	67.65	-0.335	410.8	0.27	36.58	0.111	208.8	18.6	14.45	176.5; local maximum rise or fall;
557	63.45	-0.262	435.2	4.161	36.53	0.219	478.5	20.2	-38.91	266.1; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.05 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.58E-5	38825.7	1239.4	100.0	2406.6	0.0	0.0	1.00E-5	3.00E-4
1.76E-5	56984.7	1819.1	200.0	5184.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 41; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.003.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.35	28.92	0.0	0.0	0.201	90.0	0.0003	23.13
3.048	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.962	0.174	90.0	36.35	28.91	0.0	0.0	0.174	90.0	0.0003	23.13
4.877	0.168	90.0	36.35	28.85	0.0	0.0	0.168	90.0	0.0003	23.15
6.096	0.159	90.0	36.36	28.78	0.0	0.0	0.159	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.148	90.0	36.24	28.56	0.0	0.0	0.148	90.0	0.0003	23.17
9.144	0.144	90.0	36.29	28.5	0.0	0.0	0.144	90.0	0.0003	23.22
10.06	0.141	90.0	36.38	28.13	0.0	0.0	0.141	90.0	0.0003	23.41
10.97	0.138	90.0	36.41	25.88	0.0	0.0	0.138	90.0	0.0003	24.16
12.7	0.132	90.0	36.47	25.57	0.0	0.0	0.132	90.0	0.0003	24.3
13.11	0.108	90.0	36.42	25.33	0.0	0.0	0.108	90.0	0.0003	24.34
14.02	0.0539	90.0	36.43	25.05	0.0	0.0	0.0539	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 25.16; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0539	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	44.18	0.0859	42.05	19.16	32.09	0.681	7.096	6.099	0.252	1.598;
200	35.45	0.138	218.8	35.7	35.83	0.184	51.21	19.1	6.586	20.71;
209	34.35	0.14	246.9	33.05	35.92	0.172	60.92	19.99	7.927	24.06; trap level, begin overlap;
213	33.93	0.14	258.7	31.36	35.95	0.167	64.97	20.32	8.501	25.47; acute zone;
271	31.35	0.143	342.1	-0.49	36.08	0.138	93.52	23.95	16.88	45.48; local maximum rise or fall;
300	32.33	0.142	356.9	-16.59	36.11	0.144	105.6	25.88	22.34	58.28;
302	32.52	0.142	360.2	-17.6	36.11	0.144	108.1	26.06	22.91	59.61; end overlap;
313	34.22	0.14	393.8	-19.96	36.16	0.146	131.4	27.35	27.42	70.01; trap level;
317	34.72	0.139	410.0	-17.51	36.18	0.144	140.4	27.72	28.89	73.36; begin overlap;
348	35.65	0.138	440.4	0.516	36.2	0.137	153.7	28.99	34.5	86.15; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.19 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
8.07E-5	12392.0	1246.5	100.0	2396.3	0.0	0.0	1.00E-5	3.00E-4
5.49E-5	18208.7	1831.7	200.0	5174.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 42; ambient file C:\Plumes\Proj\00\OO_SUM_49ft_UNIa.003.db; Diffuser table record 6: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.201	90.0	36.35	28.92	0.0	0.0	0.201	90.0	0.0003	23.13
3.048	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.962	0.174	90.0	36.35	28.91	0.0	0.0	0.174	90.0	0.0003	23.13
4.877	0.168	90.0	36.35	28.85	0.0	0.0	0.168	90.0	0.0003	23.15
6.096	0.159	90.0	36.36	28.78	0.0	0.0	0.159	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.148	90.0	36.24	28.56	0.0	0.0	0.148	90.0	0.0003	23.17
9.144	0.144	90.0	36.29	28.5	0.0	0.0	0.144	90.0	0.0003	23.22
10.06	0.141	90.0	36.38	28.13	0.0	0.0	0.141	90.0	0.0003	23.41
10.97	0.138	90.0	36.41	25.88	0.0	0.0	0.138	90.0	0.0003	24.16
12.7	0.132	90.0	36.47	25.57	0.0	0.0	0.132	90.0	0.0003	24.3
13.11	0.108	90.0	36.42	25.33	0.0	0.0	0.108	90.0	0.0003	24.34
14.02	0.0539	90.0	36.43	25.05	0.0	0.0	0.0539	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	28.0	1.0

Simulation:

Froude number: 30.3; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	44.22	0.0852	42.34	17.91	33.47	0.676	7.141	6.152	0.255	1.614;
200	36.83	0.137	225.1	29.24	36.02	0.171	50.4	19.57	6.651	21.18;
209	35.86	0.138	252.6	28.09	36.08	0.162	60.23	20.57	8.118	24.9; acute zone;
216	35.1	0.139	275.7	26.14	36.13	0.156	69.07	21.31	9.411	28.11; trap level;
217	35.0	0.139	278.9	25.75	36.13	0.155	70.31	21.4	9.59	28.55; begin overlap;

264	33.08	0.141	345.1	-0.0426	36.2	0.137	94.31	24.31	16.48	45.12; local maximum rise or fall;
296	34.13	0.14	356.7	-17.54	36.22	0.143	105.1	26.2	21.73	57.55; end overlap;
300	34.71	0.139	369.4	-18.52	36.23	0.144	113.3	26.73	23.39	61.46;
303	35.15	0.139	381.1	-17.83	36.24	0.143	120.3	27.11	24.67	64.45; trap level;
308	35.7	0.138	400.4	-14.95	36.25	0.141	130.8	27.61	26.47	68.64; begin overlap;
335	36.48	0.137	432.6	0.492	36.27	0.136	146.8	29.13	32.63	82.88; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.99 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
8.38E-5	11934.5	1234.8	100.0	2407.5	0.0	0.0	1.00E-5	3.00E-4	
5.71E-5	17514.5	1812.1	200.0	5185.2	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 43; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.003.db; Diffuser table record 7: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.35	28.92	0.0	0.0	0.201	90.0	0.0003	23.13
3.048	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.962	0.174	90.0	36.35	28.91	0.0	0.0	0.174	90.0	0.0003	23.13
4.877	0.168	90.0	36.35	28.85	0.0	0.0	0.168	90.0	0.0003	23.15
6.096	0.159	90.0	36.36	28.78	0.0	0.0	0.159	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.148	90.0	36.24	28.56	0.0	0.0	0.148	90.0	0.0003	23.17
9.144	0.144	90.0	36.29	28.5	0.0	0.0	0.144	90.0	0.0003	23.22
10.06	0.141	90.0	36.38	28.13	0.0	0.0	0.141	90.0	0.0003	23.41
10.97	0.138	90.0	36.41	25.88	0.0	0.0	0.138	90.0	0.0003	24.16
12.7	0.132	90.0	36.47	25.57	0.0	0.0	0.132	90.0	0.0003	24.3
13.11	0.108	90.0	36.42	25.33	0.0	0.0	0.108	90.0	0.0003	24.34
14.02	0.0539	90.0	36.43	25.05	0.0	0.0	0.0539	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.29	0.0841	42.75	15.95	35.54	0.669	7.21	6.232	0.258	1.637;
200	39.31	0.134	228.5	16.37	36.31	0.157	47.61	20.18	6.513	21.44;
206	38.98	0.135	245.1	15.61	36.32	0.151	52.9	20.88	7.403	23.78; acute zone;
228	37.62	0.136	316.2	11.77	36.36	0.139	80.49	23.69	12.27	36.09; trap level;
263	35.61	0.138	444.6	-0.0704	36.39	0.133	152.5	28.99	29.36	76.94; local maximum rise or fall;
277	36.39	0.138	487.6	-5.43	36.39	0.134	184.6	31.19	39.86	101.4; bottom hit;
280	36.71	0.137	502.2	-5.154	36.39	0.134	195.9	31.8	43.23	109.2; trap level;
295	37.78	0.136	581.9	0.257	36.4	0.134	262.5	35.37	67.06	164.1; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.78 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 5.49E-5 18213.2 1417.1 100.0 2135.8 0.0 0.0 1.00E-5 3.00E-4
 3.62E-5 27624.2 2149.3 200.0 4913.6 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 44; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.003.db; Diffuser table record 8: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.201	90.0	36.35	28.92	0.0	0.0	0.201	90.0	0.0003	23.13
3.048	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.962	0.174	90.0	36.35	28.91	0.0	0.0	0.174	90.0	0.0003	23.13
4.877	0.168	90.0	36.35	28.85	0.0	0.0	0.168	90.0	0.0003	23.15
6.096	0.159	90.0	36.36	28.78	0.0	0.0	0.159	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.148	90.0	36.24	28.56	0.0	0.0	0.148	90.0	0.0003	23.17
9.144	0.144	90.0	36.29	28.5	0.0	0.0	0.144	90.0	0.0003	23.22
10.06	0.141	90.0	36.38	28.13	0.0	0.0	0.141	90.0	0.0003	23.41
10.97	0.138	90.0	36.41	25.88	0.0	0.0	0.138	90.0	0.0003	24.16
12.7	0.132	90.0	36.47	25.57	0.0	0.0	0.132	90.0	0.0003	24.3
13.11	0.108	90.0	36.42	25.33	0.0	0.0	0.108	90.0	0.0003	24.34
14.02	0.0539	90.0	36.43	25.05	0.0	0.0	0.0539	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia P-elev V-angle H-angle Ports AcuteMZ ChrnMZ P-depth Ttl-flo Eff-sal Temp Polutnt

(in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 45.0 0.0 1.0 22.0 200.0 46.0 2.0 60.0 28.0 1.0

Simulation:

Froude number: -30.66; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	41.68	0.13	43.98	42.32	39.68	0.644	7.349	4.449	0.312	1.572;
159	37.33	0.136	129.9	25.09	37.55	0.218	21.57	10.03	2.654	8.328; begin overlap;
200	36.13	0.138	187.5	6.084	37.15	0.163	33.19	13.16	5.675	15.94;
213	36.05	0.138	202.3	-0.458	37.08	0.156	37.03	14.2	6.995	19.17; local maximum rise or fall;
240	36.65	0.137	237.5	-13.45	36.91	0.15	49.11	16.54	10.66	27.98; end overlap;
252	37.47	0.136	263.1	-18.24	36.82	0.15	59.89	17.78	13.2	33.97; acute zone;
280	41.32	0.133	349.7	-22.54	36.66	0.147	104.2	20.81	22.42	55.39; bottom hit;
296	44.77	0.081	422.0	-20.46	36.6	0.138	143.1	22.62	30.99	75.47; trap level;
300	46.07	0.0588	448.0	-18.8	36.59	0.132	154.9	23.29	34.6	84.33;
330	49.7	-0.0124	565.2	-1.245	36.56	0.104	192.7	26.57	53.23	135.1; begin overlap;
333	49.7	-0.0127	573.5	0.478	36.56	0.102	195.3	26.8	54.58	139.2; local maximum rise or fall;
357	48.19	0.0122	621.7	14.08	36.55	0.0956	214.1	28.73	65.47	174.0; end overlap;
359	47.9	0.0171	625.3	15.19	36.55	0.0954	216.0	28.91	66.53	177.6; matched energy radial
vel = 0.0259m/s;										
372	44.06	0.0806	672.9	20.59	36.53	0.0929	244.6	30.78	77.37	215.3; trap level;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.09 m										
conc dilutn width distance time										
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)										
6.28E-5 15925.6 1538.0 100.0 2072.8 0.0 0.0 1.00E-5 3.00E-4										
4.11E-5 24361.1 2352.7 200.0 4850.6 0.0 0.0 1.00E-5 3.00E-4										
count: 2										

/ UM3.

Case 45; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.003.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-sp	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.35	28.92	0.0	0.0	0.201	90.0	0.0003	23.13
3.048	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.962	0.174	90.0	36.35	28.91	0.0	0.0	0.174	90.0	0.0003	23.13
4.877	0.168	90.0	36.35	28.85	0.0	0.0	0.168	90.0	0.0003	23.15
6.096	0.159	90.0	36.36	28.78	0.0	0.0	0.159	90.0	0.0003	23.18

7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.148	90.0	36.24	28.56	0.0	0.0	0.148	90.0	0.0003	23.17
9.144	0.144	90.0	36.29	28.5	0.0	0.0	0.144	90.0	0.0003	23.22
10.06	0.141	90.0	36.38	28.13	0.0	0.0	0.141	90.0	0.0003	23.41
10.97	0.138	90.0	36.41	25.88	0.0	0.0	0.138	90.0	0.0003	24.16
12.7	0.132	90.0	36.47	25.57	0.0	0.0	0.132	90.0	0.0003	24.3
13.11	0.108	90.0	36.42	25.33	0.0	0.0	0.108	90.0	0.0003	24.34
14.02	0.0539	90.0	36.43	25.05	0.0	0.0	0.0539	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

Froude number: 37.74; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.17	0.086	42.35	17.02	32.09	1.007	7.096	6.471	0.183	1.146;
184	37.03	0.137	195.2	31.37	35.62	0.251	37.35	21.73	4.368	14.36; acute zone;
200	34.61	0.139	249.2	32.26	35.83	0.212	51.27	24.76	6.682	20.37;
204	34.05	0.14	264.7	31.29	35.87	0.202	55.3	25.42	7.316	21.97; trap level;
208	33.57	0.14	279.7	29.92	35.91	0.194	59.14	25.98	7.902	23.42; begin overlap;
266	30.55	0.144	397.1	-0.336	36.06	0.15	91.04	32.23	16.94	45.06; local maximum rise or fall;
297	31.93	0.142	434.3	-16.88	36.11	0.152	110.6	35.85	23.84	61.15; end overlap;
300	32.32	0.142	444.3	-18.11	36.12	0.152	116.0	36.35	24.95	63.7;
309	33.92	0.14	486.2	-19.2	36.16	0.151	138.2	38.04	29.19	73.41; trap level;
312	34.36	0.14	502.2	-17.41	36.17	0.149	145.5	38.49	30.46	76.28; begin overlap, matched
energy radial vel = 0.0454m/s;										
342	35.35	0.139	537.6	0.0848	36.19	0.141	157.5	40.36	36.14	89.16; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.65 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
8.55E-5	11690.9	1400.7	100.0	2319.0	0.0	0.0	1.00E-5	3.00E-4
5.77E-5	17331.3	2076.5	200.0	5096.8	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 46; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.003.db; Diffuser table record 10: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.35	28.92	0.0	0.0	0.201	90.0	0.0003	23.13
3.048	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.962	0.174	90.0	36.35	28.91	0.0	0.0	0.174	90.0	0.0003	23.13
4.877	0.168	90.0	36.35	28.85	0.0	0.0	0.168	90.0	0.0003	23.15
6.096	0.159	90.0	36.36	28.78	0.0	0.0	0.159	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.148	90.0	36.24	28.56	0.0	0.0	0.148	90.0	0.0003	23.17
9.144	0.144	90.0	36.29	28.5	0.0	0.0	0.144	90.0	0.0003	23.22
10.06	0.141	90.0	36.38	28.13	0.0	0.0	0.141	90.0	0.0003	23.41
10.97	0.138	90.0	36.41	25.88	0.0	0.0	0.138	90.0	0.0003	24.16
12.7	0.132	90.0	36.47	25.57	0.0	0.0	0.132	90.0	0.0003	24.3
13.11	0.108	90.0	36.42	25.33	0.0	0.0	0.108	90.0	0.0003	24.34
14.02	0.0539	90.0	36.43	25.05	0.0	0.0	0.0539	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 45.45; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.19	0.0857	42.55	16.4	33.47	1.003	7.141	6.513	0.184	1.154;
182	38.05	0.136	194.5	26.04	35.86	0.245	36.16	21.73	4.208	14.06; acute zone;
200	35.8	0.138	256.6	27.05	36.03	0.201	51.47	25.3	6.858	21.0;
207	34.94	0.139	283.5	26.07	36.07	0.188	58.73	26.53	8.06	24.03; trap level;
211	34.52	0.139	298.7	24.85	36.09	0.181	62.81	27.13	8.713	25.66; begin overlap;
258	32.51	0.142	381.3	-0.0701	36.17	0.151	84.66	31.92	15.42	41.89; local maximum rise or fall;
292	33.85	0.14	407.3	-18.33	36.2	0.155	98.92	35.43	21.36	56.0; end overlap;
299	34.87	0.139	439.4	-18.14	36.22	0.152	113.3	36.76	24.06	62.32; trap level;
300	35.01	0.139	444.7	-17.67	36.23	0.151	115.6	36.94	24.45	63.23;
302	35.23	0.139	454.3	-16.62	36.23	0.149	119.4	37.23	25.11	64.76; begin overlap;
304	35.4	0.139	461.6	-15.54	36.24	0.148	122.2	37.48	25.68	66.08; matched energy radial
332	36.23	0.138	497.0	0.537	36.25	0.141	134.7	39.73	31.33	79.16; local maximum rise or fall;

vel = 0.0403m/s;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.62 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
9.68E-5	10329.7	1337.9	100.0	2349.4	0.0	0.0	1.00E-5	3.00E-4
6.55E-5	15259.5	1976.4	200.0	5127.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 47; ambient file C:\Plumes\Proj\00\OO_SUM_49ft_UNIa.003.db; Diffuser table record 11: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.201	90.0	36.35	28.92	0.0	0.0	0.201	90.0	0.0003	23.13
3.048	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.962	0.174	90.0	36.35	28.91	0.0	0.0	0.174	90.0	0.0003	23.13
4.877	0.168	90.0	36.35	28.85	0.0	0.0	0.168	90.0	0.0003	23.15
6.096	0.159	90.0	36.36	28.78	0.0	0.0	0.159	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.148	90.0	36.24	28.56	0.0	0.0	0.148	90.0	0.0003	23.17
9.144	0.144	90.0	36.29	28.5	0.0	0.0	0.144	90.0	0.0003	23.22
10.06	0.141	90.0	36.38	28.13	0.0	0.0	0.141	90.0	0.0003	23.41
10.97	0.138	90.0	36.41	25.88	0.0	0.0	0.138	90.0	0.0003	24.16
12.7	0.132	90.0	36.47	25.57	0.0	0.0	0.132	90.0	0.0003	24.3
13.11	0.108	90.0	36.42	25.33	0.0	0.0	0.108	90.0	0.0003	24.34
14.02	0.0539	90.0	36.43	25.05	0.0	0.0	0.0539	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 78.38; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.21	0.0853	42.85	15.46	35.54	0.999	7.21	6.578	0.186	1.166;
179	39.56	0.134	191.8	17.16	36.26	0.239	34.44	21.65	3.934	13.51; acute zone;
200	37.97	0.136	264.8	15.95	36.32	0.187	50.98	25.99	6.972	21.62;
216	36.86	0.137	325.4	13.91	36.34	0.164	67.54	28.9	9.967	29.21; trap level;
237	35.46	0.138	414.6	8.909	36.36	0.147	97.88	32.66	15.58	42.9; begin overlap;

255 35.05 0.139 460.0 -0.413 36.37 0.142 115.9 35.16 20.59 54.82; local maximum rise or fall;
 267 35.35 0.139 483.7 -6.658 36.37 0.142 127.8 36.86 24.45 63.89; end overlap;
 275 36.06 0.138 520.3 -8.354 36.38 0.141 147.0 38.64 29.09 74.76; trap level, bottom hit;
 293 37.1 0.137 618.8 0.0695 36.39 0.137 202.3 43.05 43.96 109.1; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.72 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
7.07E-5	14136.5	1517.7	100.0	2256.8	0.0	0.0	1.00E-5	3.00E-4	
4.74E-5	21113.6	2266.7	200.0	5034.6	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 48; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.003.db; Diffuser table record 12: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.35	28.92	0.0	0.0	0.201	90.0	0.0003	23.13
3.048	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.962	0.174	90.0	36.35	28.91	0.0	0.0	0.174	90.0	0.0003	23.13
4.877	0.168	90.0	36.35	28.85	0.0	0.0	0.168	90.0	0.0003	23.15
6.096	0.159	90.0	36.36	28.78	0.0	0.0	0.159	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.148	90.0	36.24	28.56	0.0	0.0	0.148	90.0	0.0003	23.17
9.144	0.144	90.0	36.29	28.5	0.0	0.0	0.144	90.0	0.0003	23.22
10.06	0.141	90.0	36.38	28.13	0.0	0.0	0.141	90.0	0.0003	23.41
10.97	0.138	90.0	36.41	25.88	0.0	0.0	0.138	90.0	0.0003	24.16
12.7	0.132	90.0	36.47	25.57	0.0	0.0	0.132	90.0	0.0003	24.3
13.11	0.108	90.0	36.42	25.33	0.0	0.0	0.108	90.0	0.0003	24.34
14.02	0.0539	90.0	36.43	25.05	0.0	0.0	0.0539	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -45.99; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time

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Step      (ft)      (m/s)      (in)      (deg)      (psu)      (m/s)      ( )      (ft)      (ft)      (s)
  0        46.0      0.0539      6.0        45.0       60.0       7.205      1.0       0.0       0.0       0.0;
 100       41.35     0.132      43.66     43.74     39.69      0.98       7.349     4.712     0.228     1.126;
 172       33.73     0.14       170.8     26.52     37.28      0.247      28.14    13.85     3.523     10.07; begin overlap;
 200       32.61     0.141      213.2     11.88     37.1       0.199      35.01    16.37     5.47      14.82;
 222       32.38     0.142      231.9     -0.325    37.03      0.185      38.54    18.16     7.087     18.69; local maximum rise or
fall;
 246       32.75     0.141      245.0     -13.65    36.97      0.183      42.34    20.14     9.072     23.4; acute zone;
 269       34.1      0.14       268.3     -25.1     36.87      0.183      50.94    22.5      11.8      29.81; end overlap;
 284       36.11     0.138      320.5     -25.52    36.76      0.17       67.8     24.74    15.18     37.6; trap level;
 300       37.98     0.136      389.2     -18.97    36.67      0.154      90.46    26.78    19.35     47.12;
 309       38.96     0.135      429.9     -14.89    36.64      0.148      105.8    27.96    22.39     54.01; bottom hit;
 338       40.74     0.133      545.4     0.0829    36.58      0.138      158.3    32.12    36.86     86.88; local maximum rise or
fall;
 365       37.16     0.136      672.7     9.359     36.53      0.138      240.4    37.49    63.86     148.3; trap level;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.09 m
  conc dilutn width distnce time
  (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 6.27E-5 15950.8 1566.4 100.0 2150.8 0.0 0.0 1.00E-5 3.00E-4
 4.14E-5 24144.9 2371.1 200.0 4928.6 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 49; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.004.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.35	28.92	0.0	0.0	0.335	90.0	0.0003	23.13
3.048	0.3	90.0	36.35	28.92	0.0	0.0	0.3	90.0	0.0003	23.13
3.962	0.29	90.0	36.35	28.91	0.0	0.0	0.29	90.0	0.0003	23.13
4.877	0.279	90.0	36.35	28.85	0.0	0.0	0.279	90.0	0.0003	23.15
6.096	0.266	90.0	36.36	28.78	0.0	0.0	0.266	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.247	90.0	36.24	28.56	0.0	0.0	0.247	90.0	0.0003	23.17
9.144	0.24	90.0	36.29	28.5	0.0	0.0	0.24	90.0	0.0003	23.22
10.06	0.235	90.0	36.38	28.13	0.0	0.0	0.235	90.0	0.0003	23.41
10.97	0.23	90.0	36.41	25.88	0.0	0.0	0.23	90.0	0.0003	24.16
12.7	0.22	90.0	36.47	25.57	0.0	0.0	0.22	90.0	0.0003	24.3
13.11	0.18	90.0	36.42	25.33	0.0	0.0	0.18	90.0	0.0003	24.34
14.02	0.0898	90.0	36.43	25.05	0.0	0.0	0.0898	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	28.0	1.0

Simulation:

Froude number: 12.58; effleunt density (sigma-T) 0.034; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	44.43	0.136	40.41	25.15	32.09	0.37	7.096	4.479	0.551	2.194;
143	42.89	0.182	77.29	31.43	34.49	0.228	15.88	6.863	1.855	5.626; begin overlap;
182	41.45	0.22	116.3	25.93	35.47	0.204	31.83	8.269	3.993	9.917; end overlap;
200	40.61	0.222	138.2	21.94	35.77	0.206	45.45	8.872	5.823	13.05;
253	36.45	0.229	226.8	14.17	36.2	0.218	129.8	10.72	19.22	33.29; acute zone;
262	35.44	0.231	247.0	12.61	36.24	0.22	155.1	11.04	23.45	39.33; trap level;
286	34.04	0.233	288.4	-0.44	36.28	0.219	210.7	11.73	35.8	56.68; local maximum rise or fall;
300	34.77	0.232	301.8	-8.006	36.29	0.223	234.0	12.11	44.09	68.19;
306	35.76	0.231	318.7	-8.456	36.3	0.224	263.3	12.38	50.54	77.08; trap level;
321	36.78	0.229	349.8	0.0404	36.32	0.223	315.6	12.88	65.22	97.2; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.89 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)
3.78E-5	26415.6	1028.0	100.0	2214.9	0.0	0.0	1.00E-5	3.00E-4
2.52E-5	39658.8	1543.4	200.0	4992.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 50; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.004.db; Diffuser table record 2: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.335	90.0	36.35	28.92	0.0	0.0	0.335	90.0	0.0003	23.13
3.048	0.3	90.0	36.35	28.92	0.0	0.0	0.3	90.0	0.0003	23.13
3.962	0.29	90.0	36.35	28.91	0.0	0.0	0.29	90.0	0.0003	23.13
4.877	0.279	90.0	36.35	28.85	0.0	0.0	0.279	90.0	0.0003	23.15
6.096	0.266	90.0	36.36	28.78	0.0	0.0	0.266	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.247	90.0	36.24	28.56	0.0	0.0	0.247	90.0	0.0003	23.17
9.144	0.24	90.0	36.29	28.5	0.0	0.0	0.24	90.0	0.0003	23.22

10.06	0.235	90.0	36.38	28.13	0.0	0.0	0.235	90.0	0.0003	23.41
10.97	0.23	90.0	36.41	25.88	0.0	0.0	0.23	90.0	0.0003	24.16
12.7	0.22	90.0	36.47	25.57	0.0	0.0	0.22	90.0	0.0003	24.3
13.11	0.18	90.0	36.42	25.33	0.0	0.0	0.18	90.0	0.0003	24.34
14.02	0.0898	90.0	36.43	25.05	0.0	0.0	0.0898	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	28.0	1.0

Simulation:

Froude number: 15.15; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	44.52	0.133	41.01	22.14	33.47	0.361	7.141	4.548	0.56	2.236;
142	43.19	0.173	78.66	26.67	35.08	0.217	15.67	7.022	1.88	5.776; begin overlap;
184	41.83	0.214	121.5	21.63	35.79	0.191	32.59	8.685	4.321	10.84; end overlap;
200	41.18	0.221	140.9	18.22	35.97	0.195	44.74	9.273	6.037	13.89;
249	37.93	0.226	219.8	11.53	36.27	0.212	118.0	11.22	18.93	33.86; acute zone;
271	35.7	0.23	269.9	8.318	36.32	0.217	182.5	12.15	31.81	52.48; trap level;
287	34.8	0.232	299.5	-0.343	36.34	0.218	225.7	12.75	43.67	69.2; local maximum rise or fall;
300	35.71	0.231	317.4	-6.937	36.34	0.221	257.0	13.24	54.83	84.78;
303	36.18	0.23	326.4	-6.654	36.35	0.221	272.7	13.39	58.72	90.18; trap level;
317	37.37	0.227	367.0	0.498	36.36	0.222	345.2	14.21	83.75	124.7; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.32 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)
3.65E-5	27420.4	1023.1	100.0	2058.6	0.0	0.0	1.00E-5	3.00E-4
2.38E-5	42027.9	1568.2	200.0	4836.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 51; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.004.db; Diffuser table record 3: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.335	90.0	36.35	28.92	0.0	0.0	0.335	90.0	0.0003	23.13

3.048	0.3	90.0	36.35	28.92	0.0	0.0	0.3	90.0	0.0003	23.13
3.962	0.29	90.0	36.35	28.91	0.0	0.0	0.29	90.0	0.0003	23.13
4.877	0.279	90.0	36.35	28.85	0.0	0.0	0.279	90.0	0.0003	23.15
6.096	0.266	90.0	36.36	28.78	0.0	0.0	0.266	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.247	90.0	36.24	28.56	0.0	0.0	0.247	90.0	0.0003	23.17
9.144	0.24	90.0	36.29	28.5	0.0	0.0	0.24	90.0	0.0003	23.22
10.06	0.235	90.0	36.38	28.13	0.0	0.0	0.235	90.0	0.0003	23.41
10.97	0.23	90.0	36.41	25.88	0.0	0.0	0.23	90.0	0.0003	24.16
12.7	0.22	90.0	36.47	25.57	0.0	0.0	0.22	90.0	0.0003	24.3
13.11	0.18	90.0	36.42	25.33	0.0	0.0	0.18	90.0	0.0003	24.34
14.02	0.0898	90.0	36.43	25.05	0.0	0.0	0.0898	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 26.13; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.66	0.129	41.85	17.14	35.54	0.35	7.21	4.651	0.575	2.299;
143	43.66	0.159	83.35	17.37	36.03	0.198	16.06	7.418	2.039	6.321; begin overlap;
181	42.82	0.184	124.1	13.52	36.21	0.17	30.29	9.213	4.404	11.63; end overlap;
200	42.29	0.2	148.9	10.65	36.28	0.172	44.01	10.15	6.74	16.24;
241	40.68	0.222	210.4	5.772	36.38	0.194	99.11	12.36	18.69	36.5; acute zone;
251	40.15	0.223	229.5	4.74	36.4	0.199	120.8	12.99	24.54	45.65; trap level;
281	38.77	0.225	300.8	-0.171	36.42	0.209	218.8	15.51	63.11	103.0; local maximum rise or fall;
297	39.92	0.223	348.9	-1.959	36.42	0.214	300.4	17.26	104.5	162.6; trap level, bottom hit;
300	40.19	0.223	359.0	-1.652	36.43	0.214	318.8	17.57	113.3	175.2;
307	40.53	0.222	383.8	0.106	36.43	0.215	366.2	18.45	141.7	215.6; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.75 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)
4.00E-5	25006.5	920.0	100.0	1567.8	0.0	0.0	1.00E-5	3.00E-4
2.40E-5	41631.1	1531.7	200.0	4345.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 52; ambient file C:\Plumes\Proj\00\OO_SUM_49ft_UNIa.004.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.35	28.92	0.0	0.0	0.335	90.0	0.0003	23.13
3.048	0.3	90.0	36.35	28.92	0.0	0.0	0.3	90.0	0.0003	23.13
3.962	0.29	90.0	36.35	28.91	0.0	0.0	0.29	90.0	0.0003	23.13
4.877	0.279	90.0	36.35	28.85	0.0	0.0	0.279	90.0	0.0003	23.15
6.096	0.266	90.0	36.36	28.78	0.0	0.0	0.266	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.247	90.0	36.24	28.56	0.0	0.0	0.247	90.0	0.0003	23.17
9.144	0.24	90.0	36.29	28.5	0.0	0.0	0.24	90.0	0.0003	23.22
10.06	0.235	90.0	36.38	28.13	0.0	0.0	0.235	90.0	0.0003	23.41
10.97	0.23	90.0	36.41	25.88	0.0	0.0	0.23	90.0	0.0003	24.16
12.7	0.22	90.0	36.47	25.57	0.0	0.0	0.22	90.0	0.0003	24.3
13.11	0.18	90.0	36.42	25.33	0.0	0.0	0.18	90.0	0.0003	24.34
14.02	0.0898	90.0	36.43	25.05	0.0	0.0	0.0898	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	28.0	1.0

Simulation:

Froude number: -15.33; effleunt density (sigma-T) 41.53; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0898	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	43.0	0.179	43.66	35.27	39.7	0.326	7.296	3.24	0.631	2.123;
112	42.7	0.188	52.27	31.47	39.13	0.277	8.841	3.64	0.871	2.696; begin overlap;
183	41.62	0.22	98.33	4.781	37.54	0.196	21.87	5.746	3.713	8.106; end overlap;
196	41.58	0.22	108.8	-0.421	37.34	0.197	26.93	6.275	5.092	10.4; local maximum rise or fall;
200	41.59	0.22	112.4	-2.137	37.28	0.198	28.86	6.478	5.713	11.41;
251	44.26	0.145	186.1	-14.06	36.75	0.196	79.03	9.041	20.09	33.87; acute zone;
255	44.74	0.131	195.3	-14.57	36.72	0.193	85.55	9.244	21.92	36.86; bottom hit;
288	52.66	-0.103	346.0	-21.07	36.59	0.115	164.4	11.58	46.81	87.85; trap level;
297	54.37	-0.157	457.5	-25.34	36.56	0.0773	195.5	12.03	50.83	102.1; begin overlap;
300	54.77	-0.169	497.2	-26.88	36.56	0.0685	203.2	12.13	51.62	105.9;
400	57.92	-0.267	1304.2	-4.391	36.54	0.0127	250.4	13.59	55.94	167.5;

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408      57.92  -0.267  1308.8   0.199   36.54   0.0126   250.5   13.64   56.01   169.5; local maximum rise or
fall;
500      57.5   -0.255  1218.2   47.67   36.54   0.0148   253.5   14.14   56.7    191.9;
588      53.12  -0.128   927.5   67.59   36.54   0.0278   275.5   15.51   56.51   255.5; matched energy radial
vel = 0.0101m/s;
590      52.88  -0.12   928.1   66.69   36.53   0.0278   276.8   15.57   56.43   258.3; trap level;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of      23.57 m
  conc dilutn  width distnce
(kg/kg)      (m)      (m)      (hrs)
5.89E-5 16989.2 1999.7 100.0 2282.2 0.0 0.0 1.00E-5 3.00E-4
3.95E-5 25296.1 2977.5 200.0 5059.9 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 53; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.004.db; Diffuser table record 5: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.335	90.0	36.35	28.92	0.0	0.0	0.335	90.0	0.0003	23.13
3.048	0.3	90.0	36.35	28.92	0.0	0.0	0.3	90.0	0.0003	23.13
3.962	0.29	90.0	36.35	28.91	0.0	0.0	0.29	90.0	0.0003	23.13
4.877	0.279	90.0	36.35	28.85	0.0	0.0	0.279	90.0	0.0003	23.15
6.096	0.266	90.0	36.36	28.78	0.0	0.0	0.266	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.247	90.0	36.24	28.56	0.0	0.0	0.247	90.0	0.0003	23.17
9.144	0.24	90.0	36.29	28.5	0.0	0.0	0.24	90.0	0.0003	23.22
10.06	0.235	90.0	36.38	28.13	0.0	0.0	0.235	90.0	0.0003	23.41
10.97	0.23	90.0	36.41	25.88	0.0	0.0	0.23	90.0	0.0003	24.16
12.7	0.22	90.0	36.47	25.57	0.0	0.0	0.22	90.0	0.0003	24.3
13.11	0.18	90.0	36.42	25.33	0.0	0.0	0.18	90.0	0.0003	24.34
14.02	0.0898	90.0	36.43	25.05	0.0	0.0	0.0898	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

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Froude number:      25.16; effleunt density (sigma-T)      0.034; effleunt velocity      4.804(m/s);
  Depth  Amb-cur  P-dia  V-angle  Eff-sal  P-speed  Dilutn  x-posn  y-posn  Time
Step    (ft)    (m/s)  (in)   (deg)   (psu)   (m/s)   ( )    (ft)   (ft)   (s)

```


0	46.0	0.0898	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	44.36	0.138	41.97	18.6	32.09	0.684	7.096	5.561	0.37	1.429;
161	41.64	0.219	117.9	25.5	35.08	0.281	22.74	11.57	2.666	6.809; begin overlap;
194	40.07	0.223	170.9	23.27	35.68	0.236	39.94	13.79	5.257	11.38; end overlap;
200	39.72	0.223	182.9	22.42	35.76	0.231	44.92	14.21	5.991	12.57;
238	36.7	0.228	271.6	16.93	36.12	0.223	95.31	16.93	14.17	24.98; acute zone;
251	35.27	0.231	308.7	14.67	36.18	0.224	123.3	17.89	19.13	32.13; trap level;
279	33.62	0.234	373.2	-0.453	36.25	0.221	177.7	19.59	31.57	49.62; local maximum rise or fall;
300	35.44	0.231	416.0	-9.113	36.28	0.226	226.0	21.09	46.13	69.72; trap level;
316	36.45	0.229	455.7	0.113	36.3	0.224	269.0	22.11	58.74	86.96; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.57 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)
4.81E-5	20762.4	1234.8	100.0	2246.4	0.0	0.0	1.00E-5	3.00E-4
3.22E-5	31049.5	1846.5	200.0	5024.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 54; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.004.db; Diffuser table record 6: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-sp (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.335	90.0	36.35	28.92	0.0	0.0	0.335	90.0	0.0003	23.13
3.048	0.3	90.0	36.35	28.92	0.0	0.0	0.3	90.0	0.0003	23.13
3.962	0.29	90.0	36.35	28.91	0.0	0.0	0.29	90.0	0.0003	23.13
4.877	0.279	90.0	36.35	28.85	0.0	0.0	0.279	90.0	0.0003	23.15
6.096	0.266	90.0	36.36	28.78	0.0	0.0	0.266	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.247	90.0	36.24	28.56	0.0	0.0	0.247	90.0	0.0003	23.17
9.144	0.24	90.0	36.29	28.5	0.0	0.0	0.24	90.0	0.0003	23.22
10.06	0.235	90.0	36.38	28.13	0.0	0.0	0.235	90.0	0.0003	23.41
10.97	0.23	90.0	36.41	25.88	0.0	0.0	0.23	90.0	0.0003	24.16
12.7	0.22	90.0	36.47	25.57	0.0	0.0	0.22	90.0	0.0003	24.3
13.11	0.18	90.0	36.42	25.33	0.0	0.0	0.18	90.0	0.0003	24.34
14.02	0.0898	90.0	36.43	25.05	0.0	0.0	0.0898	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
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6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 2.0 15.0 28.0 1.0

Simulation:

Froude number: 30.3; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	44.39	0.137	42.24	17.48	33.47	0.679	7.141	5.607	0.373	1.442;
162	41.88	0.212	121.9	21.92	35.53	0.269	23.29	11.9	2.796	7.151; begin overlap;
198	40.39	0.222	179.9	19.0	35.95	0.226	42.35	14.42	5.818	12.52; end overlap;
200	40.29	0.222	183.9	18.71	35.97	0.224	44.0	14.56	6.071	12.93;
235	38.0	0.226	264.4	13.83	36.21	0.218	87.93	17.28	13.66	24.64; acute zone;
260	35.53	0.231	336.9	10.22	36.29	0.22	144.3	19.44	25.13	41.26; trap level;
279	34.44	0.233	384.6	-0.00998	36.31	0.219	187.6	20.88	36.59	57.41; local maximum rise or fall;
297	35.92	0.23	424.7	-7.465	36.33	0.224	233.1	22.37	51.6	78.24; trap level;
300	36.36	0.229	437.6	-5.895	36.34	0.223	247.3	22.7	55.39	83.47;
308	36.94	0.228	464.2	-1.424	36.34	0.223	277.6	23.47	65.36	97.17; bottom hit;
311	36.96	0.228	470.9	0.264	36.35	0.223	285.7	23.77	69.48	102.8; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.96 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)
4.68E-5	21374.0	1236.5	100.0	2156.0	0.0	0.0	1.00E-5	3.00E-4
3.09E-5	32332.3	1870.4	200.0	4933.8	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 55; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.004.db; Diffuser table record 7: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.335	90.0	36.35	28.92	0.0	0.0	0.335	90.0	0.0003	23.13
3.048	0.3	90.0	36.35	28.92	0.0	0.0	0.3	90.0	0.0003	23.13
3.962	0.29	90.0	36.35	28.91	0.0	0.0	0.29	90.0	0.0003	23.13
4.877	0.279	90.0	36.35	28.85	0.0	0.0	0.279	90.0	0.0003	23.15
6.096	0.266	90.0	36.36	28.78	0.0	0.0	0.266	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.247	90.0	36.24	28.56	0.0	0.0	0.247	90.0	0.0003	23.17
9.144	0.24	90.0	36.29	28.5	0.0	0.0	0.24	90.0	0.0003	23.22
10.06	0.235	90.0	36.38	28.13	0.0	0.0	0.235	90.0	0.0003	23.41
10.97	0.23	90.0	36.41	25.88	0.0	0.0	0.23	90.0	0.0003	24.16

12.7	0.22	90.0	36.47	25.57	0.0	0.0	0.22	90.0	0.0003	24.3
13.11	0.18	90.0	36.42	25.33	0.0	0.0	0.18	90.0	0.0003	24.34
14.02	0.0898	90.0	36.43	25.05	0.0	0.0	0.0898	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.44	0.136	42.63	15.74	35.54	0.673	7.21	5.675	0.378	1.462;
164	42.31	0.199	129.0	15.43	36.16	0.251	24.35	12.48	3.049	7.814; begin overlap;
200	41.27	0.221	187.2	11.77	36.29	0.212	43.1	15.23	6.3	13.79;
203	41.17	0.221	192.9	11.35	36.3	0.211	45.5	15.47	6.703	14.47; end overlap;
230	40.08	0.223	253.5	7.733	36.37	0.208	77.29	17.95	12.98	24.49; acute zone;
248	39.12	0.224	301.3	5.615	36.39	0.21	110.4	19.92	21.1	36.75; trap level;
282	37.45	0.227	416.0	-0.0391	36.41	0.217	216.4	25.02	59.62	92.15; local maximum rise or fall;
287	37.61	0.227	436.1	-1.214	36.41	0.217	239.0	26.11	71.36	108.7; bottom hit;
300	38.76	0.225	493.7	-2.104	36.42	0.219	309.1	28.64	104.2	154.6; trap level;
310	39.43	0.224	544.1	0.0435	36.42	0.22	376.8	30.85	140.6	205.2; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.82 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	Eff-sal (ppm)	P-speed (s-1)	Dilutn (m/s)	x-posn (m0.67/s2)
4.38E-5	22840.9	1157.7	100.0	1558.8	0.0	0.0	1.00E-5	3.00E-4
2.62E-5	38095.1	1930.9	200.0	4336.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 56; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.004.db; Diffuser table record 8: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.335	90.0	36.35	28.92	0.0	0.0	0.335	90.0	0.0003	23.13
3.048	0.3	90.0	36.35	28.92	0.0	0.0	0.3	90.0	0.0003	23.13
3.962	0.29	90.0	36.35	28.91	0.0	0.0	0.29	90.0	0.0003	23.13

4.877	0.279	90.0	36.35	28.85	0.0	0.0	0.279	90.0	0.0003	23.15
6.096	0.266	90.0	36.36	28.78	0.0	0.0	0.266	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.247	90.0	36.24	28.56	0.0	0.0	0.247	90.0	0.0003	23.17
9.144	0.24	90.0	36.29	28.5	0.0	0.0	0.24	90.0	0.0003	23.22
10.06	0.235	90.0	36.38	28.13	0.0	0.0	0.235	90.0	0.0003	23.41
10.97	0.23	90.0	36.41	25.88	0.0	0.0	0.23	90.0	0.0003	24.16
12.7	0.22	90.0	36.47	25.57	0.0	0.0	0.22	90.0	0.0003	24.3
13.11	0.18	90.0	36.42	25.33	0.0	0.0	0.18	90.0	0.0003	24.34
14.02	0.0898	90.0	36.43	25.05	0.0	0.0	0.0898	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -30.66; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	42.13	0.204	43.62	41.98	39.68	0.655	7.349	3.964	0.435	1.363;
144	39.76	0.223	94.0	31.05	37.89	0.321	16.6	6.679	1.894	4.105; begin overlap;
197	37.96	0.226	165.1	11.27	37.1	0.23	36.41	9.419	5.865	10.28; end overlap;
200	37.88	0.227	170.0	10.08	37.07	0.228	38.27	9.595	6.26	10.86;
224	37.46	0.227	213.5	-0.279	36.85	0.221	58.33	11.54	12.06	19.26; local maximum rise or fall;
237	37.86	0.227	241.4	-5.939	36.75	0.222	74.86	13.02	18.22	27.99; acute zone;
268	40.91	0.222	325.9	-10.55	36.61	0.225	138.3	15.85	36.66	53.69; bottom hit;
286	43.85	0.16	394.9	-9.233	36.56	0.218	197.6	17.4	53.21	76.79; trap level;
300	46.46	0.0791	479.7	-3.563	36.53	0.193	259.1	19.05	75.62	110.5;
307	46.71	0.0682	524.0	0.433	36.52	0.18	288.5	19.8	86.65	128.7; local maximum rise or fall;
324	43.64	0.152	634.4	7.679	36.5	0.162	377.8	21.78	118.4	186.8; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.11 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)
4.33E-5	23108.4	1362.0	100.0	1758.1	0.0	0.0	1.00E-5 3.00E-4
2.69E-5	37115.9	2187.6	200.0	4535.9	0.0	0.0	1.00E-5 3.00E-4

count: 2

/ UM3.

Case 57; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.004.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spdx	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.35	28.92	0.0	0.0	0.335	90.0	0.0003	23.13
3.048	0.3	90.0	36.35	28.92	0.0	0.0	0.3	90.0	0.0003	23.13
3.962	0.29	90.0	36.35	28.91	0.0	0.0	0.29	90.0	0.0003	23.13
4.877	0.279	90.0	36.35	28.85	0.0	0.0	0.279	90.0	0.0003	23.15
6.096	0.266	90.0	36.36	28.78	0.0	0.0	0.266	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.247	90.0	36.24	28.56	0.0	0.0	0.247	90.0	0.0003	23.17
9.144	0.24	90.0	36.29	28.5	0.0	0.0	0.24	90.0	0.0003	23.22
10.06	0.235	90.0	36.38	28.13	0.0	0.0	0.235	90.0	0.0003	23.41
10.97	0.23	90.0	36.41	25.88	0.0	0.0	0.23	90.0	0.0003	24.16
12.7	0.22	90.0	36.47	25.57	0.0	0.0	0.22	90.0	0.0003	24.3
13.11	0.18	90.0	36.42	25.33	0.0	0.0	0.18	90.0	0.0003	24.34
14.02	0.0898	90.0	36.43	25.05	0.0	0.0	0.0898	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

Froude number: 37.74; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0898	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.3	0.14	42.3	16.81	32.09	1.009	7.096	6.042	0.276	1.054;
200	38.84	0.225	216.3	21.89	35.79	0.259	47.01	18.5	6.344	12.62;
216	37.6	0.227	261.7	20.12	35.96	0.242	64.16	20.2	9.081	16.85; acute zone;
242	35.06	0.231	347.4	15.78	36.15	0.23	107.4	23.01	16.38	27.55; trap level;
273	33.31	0.235	434.8	-0.495	36.23	0.223	162.8	25.81	28.64	44.78; local maximum rise or fall;
294	35.08	0.232	488.3	-9.361	36.26	0.228	209.7	28.13	42.61	64.03; trap level;
300	35.85	0.23	515.6	-6.0	36.28	0.227	232.6	28.91	48.29	71.78; bottom hit;
311	36.14	0.23	538.5	0.333	36.29	0.226	252.2	29.72	54.83	80.69; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.68 m

conc	dilutn	width	distnce	time
(kg/kg)		(m)	(m)	(hrs)
				(ppm)
				(s-1)
				(m/s)(m0.67/s2)

5.42E-5 18430.4 1381.2 100.0 2249.7 0.0 0.0 1.00E-5 3.00E-4
 3.63E-5 27550.8 2064.8 200.0 5027.5 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 58; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.004.db; Diffuser table record 10: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.35	28.92	0.0	0.0	0.335	90.0	0.0003	23.13
3.048	0.3	90.0	36.35	28.92	0.0	0.0	0.3	90.0	0.0003	23.13
3.962	0.29	90.0	36.35	28.91	0.0	0.0	0.29	90.0	0.0003	23.13
4.877	0.279	90.0	36.35	28.85	0.0	0.0	0.279	90.0	0.0003	23.15
6.096	0.266	90.0	36.36	28.78	0.0	0.0	0.266	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.247	90.0	36.24	28.56	0.0	0.0	0.247	90.0	0.0003	23.17
9.144	0.24	90.0	36.29	28.5	0.0	0.0	0.24	90.0	0.0003	23.22
10.06	0.235	90.0	36.38	28.13	0.0	0.0	0.235	90.0	0.0003	23.41
10.97	0.23	90.0	36.41	25.88	0.0	0.0	0.23	90.0	0.0003	24.16
12.7	0.22	90.0	36.47	25.57	0.0	0.0	0.22	90.0	0.0003	24.3
13.11	0.18	90.0	36.42	25.33	0.0	0.0	0.18	90.0	0.0003	24.34
14.02	0.0898	90.0	36.43	25.05	0.0	0.0	0.0898	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 45.45; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0898	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.31	0.139	42.5	16.24	33.47	1.006	7.141	6.081	0.278	1.061;
190	39.98	0.223	193.3	19.13	35.9	0.269	39.04	17.69	5.114	10.74; begin overlap;
200	39.44	0.224	217.4	18.34	35.99	0.254	46.48	18.72	6.331	12.72; end overlap;
214	38.56	0.225	256.1	16.78	36.1	0.238	60.51	20.24	8.648	16.34; acute zone;
250	35.46	0.231	377.0	11.57	36.26	0.225	123.4	24.53	20.34	33.5; trap level;
273	34.19	0.233	447.5	-0.313	36.3	0.222	171.6	27.06	32.33	50.37; local maximum rise or
fall;										
291	35.66	0.231	498.7	-7.766	36.32	0.226	216.5	29.36	46.56	70.07; trap level;

293 35.96 0.23 508.7 -6.966 36.32 0.226 225.2 29.68 48.91 73.3; bottom hit;
 300 36.54 0.229 536.5 -2.895 36.33 0.225 249.3 30.59 55.92 82.91;
 306 36.64 0.229 552.7 0.458 36.34 0.224 264.3 31.32 62.1 91.37; local maximum rise or
 fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.04 m

conc	dilutn	width	distnce	time						
(kg/kg)		(m)	(m)	(hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)		
5.29E-5	18885.7	1386.3	100.0	2188.9	0.0	0.0	1.00E-5	3.00E-4		
3.51E-5	28447.3	2088.1	200.0	4966.6	0.0	0.0	1.00E-5	3.00E-4		

count: 2

/ UM3.

Case 59; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.004.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.35	28.92	0.0	0.0	0.335	90.0	0.0003	23.13
3.048	0.3	90.0	36.35	28.92	0.0	0.0	0.3	90.0	0.0003	23.13
3.962	0.29	90.0	36.35	28.91	0.0	0.0	0.29	90.0	0.0003	23.13
4.877	0.279	90.0	36.35	28.85	0.0	0.0	0.279	90.0	0.0003	23.15
6.096	0.266	90.0	36.36	28.78	0.0	0.0	0.266	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.247	90.0	36.24	28.56	0.0	0.0	0.247	90.0	0.0003	23.17
9.144	0.24	90.0	36.29	28.5	0.0	0.0	0.24	90.0	0.0003	23.22
10.06	0.235	90.0	36.38	28.13	0.0	0.0	0.235	90.0	0.0003	23.41
10.97	0.23	90.0	36.41	25.88	0.0	0.0	0.23	90.0	0.0003	24.16
12.7	0.22	90.0	36.47	25.57	0.0	0.0	0.22	90.0	0.0003	24.3
13.11	0.18	90.0	36.42	25.33	0.0	0.0	0.18	90.0	0.0003	24.34
14.02	0.0898	90.0	36.43	25.05	0.0	0.0	0.0898	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 78.38; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0898	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.34	0.139	42.79	15.37	35.54	1.002	7.21	6.139	0.281	1.072;

182	41.02	0.221	178.0	14.12	36.25	0.277	34.06	17.21	4.343	9.608; begin overlap;
200	40.36	0.222	218.8	12.38	36.31	0.246	45.73	19.15	6.374	13.01;
206	40.13	0.223	233.9	11.68	36.32	0.239	50.72	19.81	7.248	14.42; end overlap;
212	39.89	0.223	250.0	10.93	36.33	0.234	56.5	20.49	8.276	16.05; acute zone;
241	38.4	0.226	343.1	6.963	36.38	0.22	99.88	24.42	17.17	29.47; trap level;
275	36.44	0.229	480.6	1.399	36.4	0.22	195.8	30.73	45.87	70.44; bottom hit;
281	36.34	0.229	509.3	-0.0253	36.4	0.221	220.6	32.3	56.26	84.97; local maximum rise or fall;
300	37.76	0.227	611.7	-2.332	36.41	0.223	321.3	37.46	100.5	146.2; trap level;
311	38.55	0.225	681.5	0.127	36.41	0.223	399.5	40.78	139.4	199.6; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.31 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)
4.47E-5	22383.8	1340.4	100.0	1547.6	0.0	0.0	1.00E-5	3.00E-4
2.67E-5	37418.6	2240.7	200.0	4325.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 60; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.004.db; Diffuser table record 12: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.335	90.0	36.35	28.92	0.0	0.0	0.335	90.0	0.0003	23.13
3.048	0.3	90.0	36.35	28.92	0.0	0.0	0.3	90.0	0.0003	23.13
3.962	0.29	90.0	36.35	28.91	0.0	0.0	0.29	90.0	0.0003	23.13
4.877	0.279	90.0	36.35	28.85	0.0	0.0	0.279	90.0	0.0003	23.15
6.096	0.266	90.0	36.36	28.78	0.0	0.0	0.266	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.247	90.0	36.24	28.56	0.0	0.0	0.247	90.0	0.0003	23.17
9.144	0.24	90.0	36.29	28.5	0.0	0.0	0.24	90.0	0.0003	23.22
10.06	0.235	90.0	36.38	28.13	0.0	0.0	0.235	90.0	0.0003	23.41
10.97	0.23	90.0	36.41	25.88	0.0	0.0	0.23	90.0	0.0003	24.16
12.7	0.22	90.0	36.47	25.57	0.0	0.0	0.22	90.0	0.0003	24.3
13.11	0.18	90.0	36.42	25.33	0.0	0.0	0.18	90.0	0.0003	24.34
14.02	0.0898	90.0	36.43	25.05	0.0	0.0	0.0898	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -45.99; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	41.74	0.215	43.5	43.54	39.68	0.988	7.349	4.317	0.331	1.009;
166	36.56	0.229	142.6	29.37	37.37	0.325	25.73	10.08	3.342	6.106; begin overlap;
200	34.84	0.232	206.9	16.19	36.99	0.255	42.22	12.55	6.671	11.02;
225	34.07	0.233	254.0	4.507	36.83	0.235	58.63	14.45	10.66	16.67; end overlap;
234	33.99	0.233	269.7	-0.00374	36.78	0.233	65.36	15.21	12.66	19.46; local maximum rise or fall;
243	34.12	0.233	284.9	-4.62	36.74	0.232	72.71	16.07	15.17	22.95; acute zone;
267	36.08	0.23	354.5	-10.24	36.62	0.233	112.9	18.97	26.57	38.53; trap level;
286	38.03	0.226	431.9	-4.488	36.56	0.229	164.5	21.54	42.24	59.73; bottom hit;
297	38.59	0.225	483.0	0.436	36.53	0.227	204.3	23.82	60.77	84.76; local maximum rise or fall;
300	38.39	0.226	497.2	2.023	36.53	0.227	216.4	24.6	68.04	94.58;
316	35.82	0.23	581.9	4.503	36.5	0.228	297.0	27.81	103.6	142.6; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.78 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)
5.19E-5	19279.8	1325.9	100.0	1869.3	0.0	0.0	1.00E-5	3.00E-4
3.29E-5	30397.2	2090.4	200.0	4647.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

SUMMER (NON-UNIFORM DISTRIBUTION)

/ UM3.

Case 61; ambient file C:\Plumes\Proj\00\OO_SUM_49ft_NONa.000.db; Diffuser table record 1: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	28.0	1.0

Simulation:

Froude number: 12.58; effleunt density (sigma-T) 0.034; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
21	45.84	2.526E-5	8.956	15.55	15.69	1.589	1.503	0.602	1.710E-6	0.1; stream limit reached;
100	43.2	4.577E-5	39.91	32.56	32.09	0.38	7.096	6.857	0.00027	3.66;
190	18.57	0.000117	153.9	66.1	35.6	0.142	39.48	22.06	0.00781	45.57; acute zone;
197	14.24	0.000131	175.7	66.31	35.7	0.124	45.35	23.97	0.0105	56.54; trap level;
200	12.19	0.000138	186.7	66.19	35.74	0.117	48.12	24.87	0.012	62.25;
208	6.097	0.000157	222.1	65.33	35.83	0.0964	56.38	27.61	0.0176	81.75; matched energy radial
vel = 0.0731m/s;										
213	1.739	0.000171	248.9	64.49	35.88	0.0846	62.25	29.66	0.0228	98.24; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.32 m										

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    conc  dilutn  width distnce  time
(kg/kg)          (m)      (m)    (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
1.60E-4  6234.4   875.1  100.0 2526.6   0.0    0.0 1.00E-5 3.00E-4
1.10E-4  9033.1  1267.9  200.0 5304.4   0.0    0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 62; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	28.0	1.0

Simulation:

Froude number: 15.15; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	2.402E-5	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
21	45.84	2.526E-5	8.971	15.38	22.29	1.588	1.507	0.606	1.723E-6	0.101; stream limit reached;
100	43.4	4.423E-5	40.92	28.08	33.47	0.363	7.141	7.049	0.000279	3.794;
159	32.39	7.718E-5	97.83	57.41	35.46	0.194	21.88	17.6	0.00288	22.97; trap level;
176	25.97	9.507E-5	144.7	51.31	35.69	0.121	30.13	22.07	0.00577	38.72; acute zone;
200	21.19	0.00011	199.4	37.33	35.81	0.0786	36.56	26.85	0.0103	60.22;
201	21.09	0.000111	201.0	36.74	35.81	0.0777	36.7	26.99	0.0104	60.86; begin overlap;

265	19.13	0.000118	241.0	-0.273	35.84	0.0583	39.18	32.2	0.0165	87.49; local maximum rise or fall;
300	19.58	0.000116	237.8	-20.25	35.85	0.0611	39.84	34.56	0.0194	99.96;
342	22.36	0.000107	223.8	-43.89	35.89	0.0742	42.73	38.65	0.0247	122.3; end overlap;
378	33.28	7.796E-5	233.1	-62.78	35.99	0.0881	56.67	45.96	0.0369	170.2; trap level;
382	35.14	7.073E-5	260.8	-58.13	36.01	0.0732	59.12	46.99	0.0389	178.2; begin overlap;
400	35.66	6.908E-5	298.4	-47.33	36.01	0.0569	59.25	47.39	0.0397	181.3;
482	36.03	6.800E-5	364.7	0.172	36.01	0.0385	59.28	48.07	0.0411	186.7; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.26 m

concentration (kg/kg)	dilution	width (m)	distance (m)	time (hrs)	concentration (kg/kg)	Decay (s-1)	velocity (m/s)	diffusivity (m ² /s)
1.97E-4	5062.9	1093.4	100.0	2370.8	0.0	0.0	1.00E-5	3.00E-4
1.34E-4	7460.9	1611.3	200.0	5148.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 63; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 3: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spdx (m/s)	Far-dir (deg)	Disprsn (m ² /s)	Density (sigma-T)
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 26.13; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	2.402E-5	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;	
20	45.84	2.519E-5	8.817	15.12	32.1	1.617	1.483	0.577	1.548E-6	0.0952;	stream limit reached;
100	43.77	4.137E-5	42.39	19.84	35.54	0.34	7.21	7.331	0.000292	3.991;	
156	35.2	6.948E-5	116.7	39.2	36.14	0.136	21.84	22.1	0.00393	31.87;	acute zone;
158	34.58	7.116E-5	121.3	38.93	36.15	0.131	22.73	22.86	0.00428	34.12;	trap level;
167	33.31	7.539E-5	137.5	32.82	36.17	0.111	24.64	24.59	0.00515	39.57;	begin overlap;
200	32.43	7.796E-5	154.7	13.59	36.18	0.0925	25.68	26.56	0.00624	46.16;	
224	32.3	7.834E-5	159.0	-0.207	36.18	0.0888	25.98	27.65	0.00687	49.89;	local maximum rise or fall;
293	34.02	7.385E-5	151.1	-39.14	36.19	0.106	28.0	31.54	0.0092	63.62;	end overlap;
300	35.06	7.135E-5	154.2	-42.57	36.2	0.107	29.42	32.73	0.00999	68.12;	
303	36.25	6.861E-5	161.0	-42.41	36.21	0.101	31.06	34.02	0.0109	73.32;	trap level;
311	37.43	6.435E-5	178.6	-36.59	36.23	0.0877	32.76	35.46	0.012	79.43;	begin overlap;
375	39.18	5.928E-5	214.1	0.429	36.24	0.066	34.98	40.11	0.0159	100.4;	local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 5.44 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.76E-4	3619.1	777.4	100.0	2438.2	0.0	0.0	1.00E-5	3.00E-4
1.89E-4	5293.3	1137.0	200.0	5216.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 64; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 4: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34

14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	28.0	1.0

Simulation:

Froude number: -15.33; effleunt density (sigma-T) 41.53; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
20	45.57	2.726E-5	8.871	44.73	52.29	1.609	1.494	0.433	1.627E-6	0.0976; stream limit reached;
100	41.04	5.395E-5	46.54	29.4	39.8	0.278	7.104	5.964	0.000419	4.491;
151	39.94	5.714E-5	69.72	0.0113	38.87	0.175	9.865	9.703	0.00115	10.15; begin overlap;
152	39.95	5.714E-5	70.0	-0.562	38.86	0.174	9.903	9.761	0.00117	10.25; local maximum rise or
fall;										
195	40.53	5.561E-5	77.84	-25.08	38.51	0.165	11.55	12.19	0.00181	14.86; end overlap;
200	40.68	5.520E-5	78.52	-27.92	38.47	0.166	11.79	12.49	0.0019	15.48;
265	48.55	6.329E-6	96.68	-64.26	37.6	0.192	20.72	18.69	0.00438	32.49; bottom hit;
286	57.33-6.288E-5		120.9	-72.73	37.21	0.185	31.4	22.0	0.00584	47.59; acute zone;
300	64.68-0.000121		143.7	-76.02	37.03	0.172	41.44	24.02	0.006	60.61;
326	82.95-0.000265		215.2	-78.69	36.82	0.127	69.35	27.94-4.172E-5		98.77; trap level;
345	97.74-0.000388		364.8	-71.03	36.76	0.0577	92.02	31.41	-0.0196	149.5; begin overlap;
400	100.5-0.000412		581.8	-38.35	36.76	0.0236	93.2	32.89	-0.0309	173.7;
467	100.7-0.000414		659.7	0.331	36.76	0.0185	93.21	33.4	-0.0349	182.1; local maximum rise or
fall;										
500	100.6-0.000413		642.3	19.17	36.76	0.0196	93.21	33.62	-0.0366	185.7;
599	96.03-0.000379		357.8	74.36	36.76	0.0667	96.06	35.86	-0.0543	222.8; end overlap;
600	95.64-0.000377		354.0	74.89	36.76	0.0685	96.59	35.97	-0.0552	224.6;
614	81.36 -0.00027		349.0	79.88	36.72	0.0825	119.1	38.8	-0.0856	278.4; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.87 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
9.54E-5	10488.6	1079.4	100.0	2449.3	0.0	0.0	1.00E-5	3.00E-4
6.53E-5	15322.1	1576.8	200.0	5227.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 65; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 25.16; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	2.402E-5	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.79	4.128E-5	42.01	20.19	32.09	0.682	7.096	7.235	0.000144	1.97;
160	33.8	7.325E-5	116.9	45.91	35.09	0.285	22.84	22.31	0.00209	16.65; acute zone;
171	29.52	8.489E-5	142.9	47.36	35.33	0.236	28.39	26.3	0.00327	23.57; trap level;
200	13.4	0.000135	264.7	40.69	35.76	0.12	49.8	42.34	0.0128	66.41;
218	8.395	0.000152	327.4	30.13	35.84	0.0914	57.34	49.31	0.0196	91.68; matched energy radial
vel = 0.0743m/s;										
229	6.825	0.000157	354.4	23.76	35.86	0.0822	60.24	52.42	0.0231	104.0; begin overlap;
236	6.136	0.00016	368.0	19.72	35.88	0.0782	61.63	54.17	0.0252	111.2; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.35 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
1.93E-4	5190.3	1088.0	100.0	2319.1	0.0	0.0	1.00E-5	3.00E-4	
1.30E-4	7694.4	1613.0	200.0	5096.9	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 66; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.000.db; Diffuser table record 6: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	28.0	1.0

Simulation:

Froude number: 30.3; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	2.402E-5	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.85	4.082E-5	42.34	18.66	33.47	0.676	7.141	7.306	0.000145	1.992;
155	36.04	6.719E-5	115.2	37.8	35.44	0.273	21.19	22.04	0.0019	15.74; acute zone;
165	32.71	7.621E-5	136.8	40.88	35.61	0.234	25.83	25.98	0.00289	21.98; trap level;
200	25.48	9.705E-5	219.8	21.73	35.82	0.132	37.22	36.81	0.0072	45.13;
223	24.22	0.000101	251.0	8.605	35.87	0.112	41.13	41.53	0.00978	57.5; begin overlap;
238	24.02	0.000102	265.0	-0.015	35.89	0.106	43.13	44.38	0.0115	65.52; local maximum rise or fall;
300	27.49	9.206E-5	280.2	-35.46	35.96	0.111	50.38	54.96	0.019	98.47;
305	28.19	9.019E-5	280.6	-38.26	35.96	0.113	51.37	55.89	0.0197	101.6; end overlap;
325	34.94	7.349E-5	300.8	-47.25	36.02	0.112	60.28	62.59	0.0257	126.6; trap level;
327	35.8	6.900E-5	319.8	-43.09	36.02	0.102	61.46	63.48	0.0266	130.3; begin overlap;
400	36.89	6.563E-5	380.1	-0.6	36.02	0.0739	61.78	65.77	0.0288	139.7;

402 36.89 6.563E-5 380.1 0.546 36.02 0.0739 61.78 65.82 0.0289 139.9; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.66 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.99E-4	5036.8	1087.8	100.0	2220.5	0.0	0.0	1.00E-5	3.00E-4
1.32E-4	7556.7	1632.1	200.0	4998.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 67; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 7: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports (in)	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn (in)	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.95	4.007E-5	42.81	16.25	35.54	0.667	7.21	7.412	0.000147	2.025;
152	38.7	6.009E-5	117.6	22.6	36.12	0.248	20.18	22.43	0.00183	15.67; acute zone;
168	34.94	7.026E-5	159.3	25.66	36.2	0.185	27.7	30.67	0.00383	28.82; trap level;

183	33.14	7.591E-5	188.9	16.43	36.23	0.152	31.62	35.07	0.00527	37.5; begin overlap;
200	32.72	7.715E-5	200.6	6.576	36.23	0.141	32.93	37.13	0.00603	41.91;
212	32.66	7.737E-5	205.4	-0.313	36.24	0.137	33.59	38.43	0.00653	44.77; local maximum rise or fall;
255	33.94	7.404E-5	214.2	-24.58	36.25	0.138	36.7	43.57	0.00864	56.63; end overlap;
266	36.16	6.890E-5	230.3	-28.85	36.26	0.13	40.67	47.73	0.0106	67.33; trap level;
277	37.66	6.371E-5	256.5	-21.45	36.27	0.114	43.61	50.9	0.0123	76.2; begin overlap;
300	38.66	6.076E-5	280.1	-8.138	36.28	0.101	46.07	54.7	0.0144	87.48;
315	38.8	6.033E-5	287.9	0.477	36.28	0.0981	47.07	56.81	0.0157	93.99; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.31 m

conc	dilutn	width	distnce	time						
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
2.34E-4	4281.8	919.3	100.0	2296.8	0.0	0.0	1.00E-5	3.00E-4		
1.57E-4	6364.4	1366.5	200.0	5074.5	0.0	0.0	1.00E-5	3.00E-4		

count: 2

/ UM3.

Case 68; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 8: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -30.66; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	2.402E-5	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0	stream limit reached;
100	40.54	5.516E-5	44.44	41.85	39.69	0.629	7.349	5.684	0.000202	2.143	
165	33.92	7.380E-5	118.6	11.15	37.84	0.207	16.97	16.53	0.00208	14.21	begin overlap;
185	33.76	7.430E-5	127.3	-0.354	37.75	0.192	18.01	18.29	0.00256	16.93	local maximum rise or fall;
200	33.87	7.404E-5	131.3	-8.927	37.71	0.187	18.66	19.52	0.00292	18.93	
228	34.67	7.191E-5	136.6	-24.79	37.6	0.188	20.25	22.05	0.00371	23.27	acute zone;
230	34.77	7.165E-5	137.1	-25.92	37.59	0.188	20.42	22.26	0.00378	23.65	end overlap;
287	47.37	1.809E-5	180.9	-57.33	37.11	0.183	34.92	34.16	0.00912	51.88	bottom hit;
300	56.61	-5.463E-5	218.1	-61.9	36.96	0.162	45.17	39.48	0.012	70.79	
310	65.31	-0.000123	259.4	-63.13	36.87	0.139	55.06	43.94	0.0138	90.73	trap level;
330	78.82	-0.000237	382.9	-53.17	36.79	0.0817	70.5	51.67	0.0128	134.2	begin overlap;
400	82.97	-0.000272	507.4	-12.32	36.79	0.0487	72.62	56.88	0.00956	167.3	
422	83.06	-0.000273	514.4	0.318	36.79	0.0475	72.69	57.81	0.00894	173.3	local maximum rise or fall;
500	80.91	-0.000256	440.1	44.56	36.78	0.0661	73.34	62.03	0.00603	200.5	
524	76.8	-0.000225	396.9	57.83	36.77	0.0848	76.46	65.16	0.0035	221.1	end overlap;
541	62.85	-0.000123	418.5	65.12	36.73	0.0888	92.38	72.12	-0.00614	273.0	trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.63 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.39E-4	7205.5	1145.9	100.0	2167.1	0.0	0.0	1.00E-5	3.00E-4
9.19E-5	10884.0	1730.9	200.0	4944.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 69; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.000.db; Diffuser table record 9: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22

10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

Froude number: 37.74; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	2.402E-5	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0	stream limit reached;
100	43.92	4.027E-5	42.35	17.37	32.09	1.007	7.096	7.299	9.667E-5	1.329	
154	37.27	6.388E-5	116.9	31.35	34.95	0.386	20.63	22.34	0.00127	10.63	acute zone;
173	30.94	8.100E-5	163.7	37.47	35.4	0.285	30.05	31.13	0.00289	20.67	trap level;
200	18.23	0.000119	288.2	27.67	35.77	0.153	50.03	50.4	0.0102	55.82	
233	13.63	0.000135	376.7	8.468	35.88	0.112	61.51	63.74	0.0187	89.36	begin overlap;
248	13.33	0.000136	397.7	-0.152	35.9	0.105	64.5	68.01	0.022	101.4	local maximum rise or fall;
292	16.38	0.000127	431.5	-25.17	35.95	0.102	73.43	80.59	0.0332	140.2	end overlap;
300	17.89	0.000122	438.4	-29.64	35.97	0.103	76.12	83.46	0.036	149.9	
326	33.19	7.968E-5	511.8	-42.22	36.05	0.0938	97.96	102.8	0.0593	225.4	trap level, matched
energy radial vel = 0.0301m/s;											
328	34.27	7.359E-5	535.0	-39.02	36.05	0.088	99.47	104.1	0.061	231.1	begin overlap;
395	35.16	7.043E-5	615.4	0.545	36.06	0.0683	99.66	106.2	0.0639	240.5	local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.63 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.57E-4	6364.8	1379.7	100.0	1878.6	0.0	0.0	1.00E-5	3.00E-4
9.98E-5	10020.1	2172.0	200.0	4656.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 70; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 10: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
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m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 45.45; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	2.402E-5	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0	stream limit reached;
100	43.94	4.009E-5	42.56	16.66	33.47	1.003	7.141	7.35	9.739E-5	1.339	
152	38.31	6.111E-5	115.4	26.15	35.38	0.382	19.97	22.02	0.00119	10.2	acute zone;
170	33.26	7.473E-5	159.9	32.16	35.69	0.284	28.52	30.79	0.00267	19.73	trap level;
200	26.89	9.313E-5	244.5	16.05	35.88	0.175	40.71	43.88	0.00643	40.14	
222	25.95	9.595E-5	277.0	3.373	35.91	0.152	45.16	49.41	0.00861	50.74	begin overlap;
228	25.91	9.608E-5	283.7	-0.0624	35.92	0.148	46.2	50.77	0.00919	53.5	local maximum rise or fall;
269	27.92	9.080E-5	313.0	-23.42	35.96	0.141	53.1	59.9	0.0136	73.66	end overlap;
297	35.18	7.269E-5	349.4	-36.65	36.03	0.132	64.48	70.93	0.0202	102.5	trap level;
299	35.72	6.922E-5	363.5	-33.82	36.03	0.126	65.26	71.71	0.0208	104.8	begin overlap;
300	35.79	6.887E-5	366.2	-33.12	36.03	0.125	65.31	71.81	0.0208	105.1	
358	36.89	6.563E-5	405.6	0.422	36.03	0.104	65.92	75.24	0.0232	115.1	local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.30 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.94E-4	5164.1	1115.3	100.0	2140.7	0.0	0.0	1.00E-5	3.00E-4
1.28E-4	7827.4	1690.5	200.0	4918.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 71; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 78.38; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	2.402E-5	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.98	3.982E-5	42.88	15.56	35.54	0.997	7.21	7.426	9.847E-5	1.354;
151	39.46	5.806E-5	116.8	18.46	36.12	0.369	19.79	22.28	0.00118	10.25; acute zone;
172	35.22	6.955E-5	175.7	20.87	36.22	0.247	29.99	34.03	0.00316	23.24; trap level;
200	32.61	7.746E-5	231.3	5.033	36.26	0.183	37.95	43.5	0.00561	37.51; begin overlap;
209	32.54	7.768E-5	239.3	-0.135	36.26	0.177	39.16	45.14	0.00611	40.31; local maximum rise or fall;
240	33.5	7.523E-5	258.2	-17.71	36.27	0.168	43.25	50.79	0.00801	50.56; end overlap;
254	36.08	6.914E-5	282.9	-23.64	36.28	0.155	48.82	57.07	0.0105	63.34; trap level;
267	37.72	6.351E-5	316.5	-15.09	36.29	0.136	52.81	61.66	0.0125	73.66; begin overlap;

294 38.46 6.126E-5 345.4 0.463 36.3 0.123 56.49 67.45 0.0152 87.64; local maximum rise or fall;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.77 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 2.11E-4 4739.9 1017.4 100.0 2206.7 0.0 0.0 1.00E-5 3.00E-4
 1.40E-4 7123.6 1529.1 200.0 4984.5 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 72; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 12: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -45.99; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	2.402E-5	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	40.5	5.526E-5	43.82	43.67	39.69	0.972	7.349	5.594	0.000131	1.398;
183	29.53	8.598E-5	157.1	10.87	37.47	0.235	22.47	21.86	0.00273	16.36; begin overlap;
185	29.48	8.611E-5	158.6	9.724	37.46	0.232	22.64	22.11	0.00279	16.69; acute zone;

200	29.32	8.661E-5	167.5	1.111	37.4	0.218	23.71	23.88	0.00328	19.12;
202	29.32	8.662E-5	168.5	-0.0355	37.4	0.217	23.84	24.11	0.00334	19.44; local maximum rise or fall;
254	31.06	8.201E-5	182.2	-29.64	37.25	0.216	27.6	30.19	0.00525	28.6; end overlap;
296	43.59	4.906E-5	241.4	-48.01	36.96	0.184	42.13	42.97	0.0109	54.67; trap level;
300	46.63	2.518E-5	263.3	-46.68	36.92	0.166	45.61	45.77	0.0125	61.98; bottom hit;
322	53.82	-3.739E-5	349.2	-33.45	36.84	0.114	54.31	54.01	0.0171	86.42; begin overlap;
380	56.82	-6.264E-5	411.0	0.0871	36.82	0.0892	58.1	62.94	0.0219	116.2; local maximum rise or fall;
400	56.55	-6.067E-5	411.8	11.52	36.81	0.09	58.74	65.46	0.0231	124.9;
453	51.43	-2.129E-5	392.0	41.42	36.79	0.108	63.84	74.59	0.0276	157.5; end overlap;
474	40.09	5.313E-5	423.6	50.43	36.73	0.106	76.53	84.6	0.0323	198.8; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.76 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.72E-4	5798.9	1126.7	100.0	2061.5	0.0	0.0	1.00E-5	3.00E-4
1.12E-4	8884.4	1726.1	200.0	4839.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 73; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.001.db; Diffuser table record 1: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.09	90.0	36.35	28.92	0.0	0.0	0.09	90.0	0.0003	23.13
3.048	0.0737	90.0	36.35	28.92	0.0	0.0	0.0737	90.0	0.0003	23.13
3.962	0.0688	90.0	36.35	28.91	0.0	0.0	0.0688	90.0	0.0003	23.13
4.877	0.0639	90.0	36.35	28.85	0.0	0.0	0.0639	90.0	0.0003	23.15
6.096	0.0573	90.0	36.36	28.78	0.0	0.0	0.0573	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0479	90.0	36.24	28.56	0.0	0.0	0.0479	90.0	0.0003	23.17
9.144	0.0424	90.0	36.29	28.5	0.0	0.0	0.0424	90.0	0.0003	23.22
10.06	0.0382	90.0	36.38	28.13	0.0	0.0	0.0382	90.0	0.0003	23.41
10.97	0.034	90.0	36.41	25.88	0.0	0.0	0.034	90.0	0.0003	24.16
13.07	0.0245	90.0	36.47	25.57	0.0	0.0	0.0245	90.0	0.0003	24.3
13.11	0.024	90.0	36.42	25.33	0.0	0.0	0.024	90.0	0.0003	24.34
14.02	0.012	90.0	36.43	25.05	0.0	0.0	0.012	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
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6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 1.0 5.0 28.0 1.0

Simulation:

Froude number: 12.58; effleunt density (sigma-T) 0.034; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.012	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	43.49	0.0218	40.17	31.18	32.09	0.375	7.096	6.354	0.121	3.334;
176	30.68	0.0411	126.1	62.51	35.44	0.168	31.46	15.92	1.676	24.42; trap level;
200	24.54	0.0496	206.3	55.21	35.75	0.1	50.14	19.05	3.458	41.46;
212	22.22	0.0535	252.0	50.39	35.87	0.0828	61.66	20.36	4.633	51.28; begin overlap;
223	20.7	0.056	287.8	45.22	35.93	0.0729	70.53	21.27	5.681	59.45; acute zone;
300	16.42	0.0632	404.7	2.41	36.05	0.0511	96.82	25.84	13.27	112.6;
305	16.41	0.0632	405.9	-0.444	36.05	0.0511	97.34	26.09	13.75	115.9; local maximum rise or fall;
359	19.31	0.0588	410.7	-29.98	36.1	0.0598	116.0	29.69	21.38	165.9; end overlap;
374	22.94	0.0529	474.0	-29.34	36.17	0.0597	156.0	31.65	27.14	201.6; trap level;
378	23.76	0.0515	496.4	-27.1	36.18	0.0584	167.2	32.06	28.62	210.6; begin overlap;
384	24.65	0.05	521.1	-23.69	36.19	0.0565	178.4	32.53	30.45	221.7; matched energy radial vel = 0.0249m/s;
385	24.77	0.0498	524.4	-23.13	36.19	0.0563	179.8	32.6	30.73	223.4; matched energy radial vel = 0.0248m/s;
389	25.44	0.049	542.8	-21.55	36.2	0.0554	189.5	33.0	32.34	233.2; trap level, end overlap;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.79 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
7.03E-5	14225.8	1430.1	100.0	2386.6	0.0	0.0	1.00E-5	3.00E-4
4.78E-5	20925.9	2103.7	200.0	5164.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 74; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.001.db; Diffuser table record 2: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.09	90.0	36.35	28.92	0.0	0.0	0.09	90.0	0.0003	23.13
3.048	0.0737	90.0	36.35	28.92	0.0	0.0	0.0737	90.0	0.0003	23.13
3.962	0.0688	90.0	36.35	28.91	0.0	0.0	0.0688	90.0	0.0003	23.13
4.877	0.0639	90.0	36.35	28.85	0.0	0.0	0.0639	90.0	0.0003	23.15
6.096	0.0573	90.0	36.36	28.78	0.0	0.0	0.0573	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25

7.925	0.0479	90.0	36.24	28.56	0.0	0.0	0.0479	90.0	0.0003	23.17
9.144	0.0424	90.0	36.29	28.5	0.0	0.0	0.0424	90.0	0.0003	23.22
10.06	0.0382	90.0	36.38	28.13	0.0	0.0	0.0382	90.0	0.0003	23.41
10.97	0.034	90.0	36.41	25.88	0.0	0.0	0.034	90.0	0.0003	24.16
13.07	0.0245	90.0	36.47	25.57	0.0	0.0	0.0245	90.0	0.0003	24.3
13.11	0.024	90.0	36.42	25.33	0.0	0.0	0.024	90.0	0.0003	24.34
14.02	0.012	90.0	36.43	25.05	0.0	0.0	0.012	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	28.0	1.0

Simulation:

Froude number: 15.15; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.012	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	43.66	0.0211	41.1	26.96	33.47	0.36	7.141	6.513	0.124	3.443;
169	33.09	0.0377	122.0	57.34	35.67	0.159	27.93	16.66	1.584	24.44; trap level;
188	29.49	0.0429	177.4	48.42	35.84	0.102	37.7	19.09	2.575	35.14; begin overlap;
200	28.5	0.0444	201.5	41.71	35.88	0.0857	40.73	19.97	3.038	39.78;
233	27.23	0.0462	238.3	22.71	35.9	0.0663	43.76	21.66	4.03	49.38; acute zone;
273	26.88	0.0467	253.8	-0.279	35.91	0.0602	44.89	23.13	4.943	58.06; local maximum rise or fall;
300	27.04	0.0465	251.7	-15.69	35.92	0.0621	45.42	24.08	5.55	63.77;
363	30.47	0.0419	232.3	-50.62	35.97	0.0861	53.52	27.64	8.039	86.69; end overlap;
375	33.75	0.0376	260.6	-52.99	36.04	0.0822	65.78	29.48	9.71	101.3; trap level;
378	34.35	0.0365	275.3	-50.47	36.05	0.0764	68.23	29.8	10.05	104.3; begin overlap;
400	35.19	0.0352	314.1	-37.25	36.06	0.0606	69.65	30.38	10.67	109.6;
465	35.59	0.0346	355.1	0.358	36.06	0.0481	70.08	31.08	11.43	116.2; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.02 m

conc (kg/kg)	dilutn	width (m)	distance (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.61E-4	6198.7	1102.5	100.0	2497.4	0.0	0.0	1.00E-5	3.00E-4
1.11E-4	9008.8	1602.3	200.0	5275.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 75; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.35	28.92	0.0	0.0	0.09	90.0	0.0003	23.13
3.048	0.0737	90.0	36.35	28.92	0.0	0.0	0.0737	90.0	0.0003	23.13
3.962	0.0688	90.0	36.35	28.91	0.0	0.0	0.0688	90.0	0.0003	23.13
4.877	0.0639	90.0	36.35	28.85	0.0	0.0	0.0639	90.0	0.0003	23.15
6.096	0.0573	90.0	36.36	28.78	0.0	0.0	0.0573	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0479	90.0	36.24	28.56	0.0	0.0	0.0479	90.0	0.0003	23.17
9.144	0.0424	90.0	36.29	28.5	0.0	0.0	0.0424	90.0	0.0003	23.22
10.06	0.0382	90.0	36.38	28.13	0.0	0.0	0.0382	90.0	0.0003	23.41
10.97	0.034	90.0	36.41	25.88	0.0	0.0	0.034	90.0	0.0003	24.16
13.07	0.0245	90.0	36.47	25.57	0.0	0.0	0.0245	90.0	0.0003	24.3
13.11	0.024	90.0	36.42	25.33	0.0	0.0	0.024	90.0	0.0003	24.34
14.02	0.012	90.0	36.43	25.05	0.0	0.0	0.012	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 26.13; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.012	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	43.98	0.0199	42.43	19.37	35.54	0.34	7.21	6.749	0.129	3.604;
174	35.22	0.0349	162.5	38.76	36.23	0.1	31.2	21.52	2.473	37.7; trap level;
176	34.83	0.0354	169.3	37.72	36.24	0.0955	32.46	21.99	2.639	39.69; acute zone;
180	34.42	0.0361	180.1	35.15	36.24	0.0891	33.89	22.51	2.834	41.99; begin overlap;
200	33.72	0.0372	199.6	23.33	36.25	0.0765	35.45	23.65	3.285	47.23;
241	33.42	0.0376	212.5	-0.348	36.25	0.0692	36.15	24.96	3.827	53.44; local maximum rise or fall;
300	34.26	0.0365	200.6	-33.66	36.26	0.0808	37.46	27.09	4.733	63.75;
312	35.19	0.0354	203.1	-39.74	36.26	0.0834	39.87	28.18	5.232	69.33; end overlap;
316	36.01	0.0344	213.4	-40.08	36.27	0.0796	42.72	29.05	5.671	74.13; trap level;
319	36.48	0.0335	225.0	-37.99	36.28	0.075	44.5	29.57	5.948	77.12; begin overlap;
386	38.57	0.0305	286.3	0.515	36.3	0.0537	50.91	34.06	8.659	106.0; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.27 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	

2.07E-4 4821.3 951.7 100.0 2480.2 0.0 0.0 1.00E-5 3.00E-4
 1.42E-4 7019.7 1385.7 200.0 5258.0 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 76; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.001.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.35	28.92	0.0	0.0	0.09	90.0	0.0003	23.13
3.048	0.0737	90.0	36.35	28.92	0.0	0.0	0.0737	90.0	0.0003	23.13
3.962	0.0688	90.0	36.35	28.91	0.0	0.0	0.0688	90.0	0.0003	23.13
4.877	0.0639	90.0	36.35	28.85	0.0	0.0	0.0639	90.0	0.0003	23.15
6.096	0.0573	90.0	36.36	28.78	0.0	0.0	0.0573	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0479	90.0	36.24	28.56	0.0	0.0	0.0479	90.0	0.0003	23.17
9.144	0.0424	90.0	36.29	28.5	0.0	0.0	0.0424	90.0	0.0003	23.22
10.06	0.0382	90.0	36.38	28.13	0.0	0.0	0.0382	90.0	0.0003	23.41
10.97	0.034	90.0	36.41	25.88	0.0	0.0	0.034	90.0	0.0003	24.16
13.07	0.0245	90.0	36.47	25.57	0.0	0.0	0.0245	90.0	0.0003	24.3
13.11	0.024	90.0	36.42	25.33	0.0	0.0	0.024	90.0	0.0003	24.34
14.02	0.012	90.0	36.43	25.05	0.0	0.0	0.012	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	28.0	1.0

Simulation:

Froude number: -15.33; effleunt density (sigma-T) 41.53; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.012	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	41.41	0.0264	47.2	31.37	39.71	0.277	7.304	5.376	0.184	4.004;
137	40.3	0.0281	72.09	10.16	38.76	0.171	10.34	8.14	0.463	8.343; begin overlap;
155	40.22	0.0282	79.01	-0.141	38.57	0.155	11.23	9.097	0.59	10.17; local maximum rise or fall;
200	40.77	0.0275	88.17	-25.74	38.26	0.147	13.21	11.36	0.94	15.06;
219	41.45	0.0265	91.79	-36.44	38.09	0.15	14.58	12.44	1.137	17.72; end overlap;
270	48.42	0.00368	113.7	-64.59	37.4	0.168	25.0	17.23	2.347	34.11; bottom hit;
300	59.76	-0.0417	161.1	-75.0	36.98	0.149	44.98	21.07	3.273	56.51;

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309    62.79  -0.0539   184.3  -76.03    36.9   0.135   53.76   21.84    3.219   63.25; acute zone;
330    68.51  -0.0773   253.1   -71.6    36.77  0.106   79.52   23.14    2.429   78.3; begin overlap;
357    73.21  -0.0963   330.1  -58.65    36.7   0.088   111.4   24.12    0.51   94.86; trap level;
400    78.92  -0.119    421.6  -34.95    36.64  0.0779  160.2   25.36   -4.74   124.5;
462    82.76  -0.135    486.5   0.0559   36.62  0.0821  224.2   26.99  -18.42  180.7; local maximum rise or
fall;
475    82.41  -0.134    491.2   7.326    36.61  0.0859  238.6   27.41  -23.11  197.8; end overlap;
500    77.57  -0.115    552.8   13.99    36.59  0.102   357.9   28.72  -43.56  265.0;
502    77.04  -0.113    562.5   13.39    36.59  0.102   372.3   28.82  -45.75  271.8; trap level;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.29 m
  conc dilutn  width distnce  time
(kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
3.67E-5 27226.6  1444.0  100.0  2320.0    0.0    0.0 1.00E-5 3.00E-4
2.48E-5 40357.9  2140.4  200.0  5097.8    0.0    0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 77; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.001.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.35	28.92	0.0	0.0	0.09	90.0	0.0003	23.13
3.048	0.0737	90.0	36.35	28.92	0.0	0.0	0.0737	90.0	0.0003	23.13
3.962	0.0688	90.0	36.35	28.91	0.0	0.0	0.0688	90.0	0.0003	23.13
4.877	0.0639	90.0	36.35	28.85	0.0	0.0	0.0639	90.0	0.0003	23.15
6.096	0.0573	90.0	36.36	28.78	0.0	0.0	0.0573	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0479	90.0	36.24	28.56	0.0	0.0	0.0479	90.0	0.0003	23.17
9.144	0.0424	90.0	36.29	28.5	0.0	0.0	0.0424	90.0	0.0003	23.22
10.06	0.0382	90.0	36.38	28.13	0.0	0.0	0.0382	90.0	0.0003	23.41
10.97	0.034	90.0	36.41	25.88	0.0	0.0	0.034	90.0	0.0003	24.16
13.07	0.0245	90.0	36.47	25.57	0.0	0.0	0.0245	90.0	0.0003	24.3
13.11	0.024	90.0	36.42	25.33	0.0	0.0	0.024	90.0	0.0003	24.34
14.02	0.012	90.0	36.43	25.05	0.0	0.0	0.012	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 25.16; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.012	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	43.89	0.0202	42.04	19.93	32.09	0.681	7.096	6.932	0.0675	1.869;
169	33.56	0.037	139.7	47.02	35.32	0.242	27.76	22.14	1.201	18.4; acute zone;
175	31.8	0.0395	156.1	47.3	35.44	0.218	31.26	23.74	1.477	21.61; trap level;
200	24.62	0.0495	260.7	38.76	35.76	0.124	49.81	30.92	3.433	41.15;
214	21.86	0.0541	326.6	32.47	35.87	0.098	61.28	34.43	4.958	54.31; begin overlap;
273	18.67	0.0595	442.6	-0.000293	35.98	0.0704	79.81	42.75	10.24	94.74; local maximum rise or fall;
300	19.26	0.0586	453.4	-15.23	36.0	0.071	84.33	46.04	12.75	112.9;
333	22.95	0.0529	489.6	-31.95	36.07	0.0741	103.0	51.76	17.79	148.1; end overlap;
344	26.19	0.048	554.3	-34.63	36.12	0.071	125.7	55.01	21.55	173.3; begin overlap;
357	29.21	0.044	561.5	-41.45	36.13	0.0755	137.3	57.26	24.53	193.1; end overlap;
362	31.85	0.0406	590.8	-41.79	36.15	0.0733	150.7	58.9	26.94	209.1; trap level, matched
energy radial vel = 0.0283m/s;										
364	32.46	0.0392	608.8	-39.93	36.15	0.0707	153.8	59.29	27.55	213.1; begin overlap;
400	33.86	0.037	689.6	-18.27	36.15	0.0567	156.5	60.49	29.41	225.7;
432	33.99	0.0368	709.5	0.186	36.16	0.0538	156.7	60.94	30.12	230.4; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 18.02 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
9.67E-5	10333.5	1642.4	100.0	2202.2	0.0	0.0	1.00E-5	3.00E-4
6.43E-5	15538.7	2469.6	200.0	4980.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 78; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.001.db; Diffuser table record 6: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.09	90.0	36.35	28.92	0.0	0.0	0.09	90.0	0.0003	23.13
3.048	0.0737	90.0	36.35	28.92	0.0	0.0	0.0737	90.0	0.0003	23.13
3.962	0.0688	90.0	36.35	28.91	0.0	0.0	0.0688	90.0	0.0003	23.13
4.877	0.0639	90.0	36.35	28.85	0.0	0.0	0.0639	90.0	0.0003	23.15
6.096	0.0573	90.0	36.36	28.78	0.0	0.0	0.0573	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0479	90.0	36.24	28.56	0.0	0.0	0.0479	90.0	0.0003	23.17
9.144	0.0424	90.0	36.29	28.5	0.0	0.0	0.0424	90.0	0.0003	23.22
10.06	0.0382	90.0	36.38	28.13	0.0	0.0	0.0382	90.0	0.0003	23.41

10.97	0.034	90.0	36.41	25.88	0.0	0.0	0.034	90.0	0.0003	24.16
13.07	0.0245	90.0	36.47	25.57	0.0	0.0	0.0245	90.0	0.0003	24.3
13.11	0.024	90.0	36.42	25.33	0.0	0.0	0.024	90.0	0.0003	24.34
14.02	0.012	90.0	36.43	25.05	0.0	0.0	0.012	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	28.0	1.0

Simulation:

Froude number: 30.3; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.012	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	43.95	0.02	42.36	18.47	33.47	0.675	7.141	6.998	0.0682	1.889;
165	35.64	0.0342	138.1	39.55	35.62	0.231	25.83	22.19	1.122	17.79; acute zone;
174	33.26	0.0375	161.7	41.29	35.75	0.2	30.87	24.9	1.548	22.97; trap level;
194	29.57	0.0428	227.1	30.81	35.89	0.135	40.75	29.66	2.591	34.4; begin overlap;
200	29.08	0.0435	239.9	27.41	35.9	0.126	42.37	30.52	2.822	36.78;
248	27.71	0.0456	288.0	-0.0858	35.95	0.1	48.08	35.6	4.395	52.28; local maximum rise or fall;
300	29.3	0.0434	294.2	-29.58	35.98	0.106	52.96	40.77	6.233	69.65;
319	31.41	0.0407	301.0	-39.92	36.01	0.111	58.27	43.5	7.335	79.74; end overlap;
329	34.45	0.0368	330.0	-42.78	36.05	0.104	67.17	46.5	8.749	92.37; trap level;
331	34.89	0.0358	342.6	-40.8	36.06	0.0991	68.5	46.95	8.979	94.41; begin overlap;
400	36.17	0.0338	404.5	-0.47	36.07	0.0739	69.9	49.38	10.25	105.7;
401	36.17	0.0338	404.5	0.103	36.07	0.0739	69.9	49.4	10.27	105.8; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.28 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.74E-4	5743.0	1166.7	100.0	2350.6	0.0	0.0	1.00E-5	3.00E-4
1.17E-4	8482.7	1723.2	200.0	5128.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 79; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.001.db; Diffuser table record 7: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
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0.0	0.09	90.0	36.35	28.92	0.0	0.0	0.09	90.0	0.0003	23.13
3.048	0.0737	90.0	36.35	28.92	0.0	0.0	0.0737	90.0	0.0003	23.13
3.962	0.0688	90.0	36.35	28.91	0.0	0.0	0.0688	90.0	0.0003	23.13
4.877	0.0639	90.0	36.35	28.85	0.0	0.0	0.0639	90.0	0.0003	23.15
6.096	0.0573	90.0	36.36	28.78	0.0	0.0	0.0573	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0479	90.0	36.24	28.56	0.0	0.0	0.0479	90.0	0.0003	23.17
9.144	0.0424	90.0	36.29	28.5	0.0	0.0	0.0424	90.0	0.0003	23.22
10.06	0.0382	90.0	36.38	28.13	0.0	0.0	0.0382	90.0	0.0003	23.41
10.97	0.034	90.0	36.41	25.88	0.0	0.0	0.034	90.0	0.0003	24.16
13.07	0.0245	90.0	36.47	25.57	0.0	0.0	0.0245	90.0	0.0003	24.3
13.11	0.024	90.0	36.42	25.33	0.0	0.0	0.024	90.0	0.0003	24.34
14.02	0.012	90.0	36.43	25.05	0.0	0.0	0.012	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.012	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.04	0.0197	42.81	16.19	35.54	0.667	7.21	7.097	0.0693	1.919;
160	38.74	0.03	137.2	22.88	36.17	0.213	23.64	22.18	1.018	16.96; acute zone;
179	35.32	0.0347	196.4	25.71	36.25	0.151	34.44	29.55	2.131	31.12; trap level;
188	34.12	0.0366	226.9	20.66	36.27	0.13	39.01	32.22	2.689	37.66; begin overlap;
200	33.65	0.0373	242.2	13.6	36.27	0.12	40.78	33.69	3.031	41.55;
224	33.4	0.0376	254.9	-0.252	36.28	0.112	42.3	35.76	3.539	47.23; local maximum rise or fall;
271	34.86	0.0358	267.8	-26.39	36.29	0.114	47.26	40.64	4.842	61.51; end overlap;
277	36.06	0.0343	287.3	-27.72	36.3	0.106	51.68	42.81	5.516	68.66; trap level;
280	36.58	0.0334	302.6	-25.48	36.3	0.1	53.79	43.81	5.849	72.16; begin overlap;
300	37.84	0.0315	341.4	-14.0	36.31	0.0866	58.64	47.09	7.031	84.44;
325	38.24	0.0309	362.9	0.351	36.32	0.0806	61.51	50.28	8.255	97.09; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.22 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.91E-4	5234.8	1084.3	100.0	2346.4	0.0	0.0	1.00E-5	3.00E-4
1.29E-4	7735.8	1602.3	200.0	5124.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 80; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.001.db; Diffuser table record 8: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.35	28.92	0.0	0.0	0.09	90.0	0.0003	23.13
3.048	0.0737	90.0	36.35	28.92	0.0	0.0	0.0737	90.0	0.0003	23.13
3.962	0.0688	90.0	36.35	28.91	0.0	0.0	0.0688	90.0	0.0003	23.13
4.877	0.0639	90.0	36.35	28.85	0.0	0.0	0.0639	90.0	0.0003	23.15
6.096	0.0573	90.0	36.36	28.78	0.0	0.0	0.0573	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0479	90.0	36.24	28.56	0.0	0.0	0.0479	90.0	0.0003	23.17
9.144	0.0424	90.0	36.29	28.5	0.0	0.0	0.0424	90.0	0.0003	23.22
10.06	0.0382	90.0	36.38	28.13	0.0	0.0	0.0382	90.0	0.0003	23.41
10.97	0.034	90.0	36.41	25.88	0.0	0.0	0.034	90.0	0.0003	24.16
13.07	0.0245	90.0	36.47	25.57	0.0	0.0	0.0245	90.0	0.0003	24.3
13.11	0.024	90.0	36.42	25.33	0.0	0.0	0.024	90.0	0.0003	24.34
14.02	0.012	90.0	36.43	25.05	0.0	0.0	0.012	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -30.66; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.012	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	40.86	0.0272	44.35	42.09	39.69	0.632	7.349	5.335	0.0916	1.978;
160	34.67	0.0358	128.6	16.65	37.71	0.194	18.75	14.77	0.946	12.97; begin overlap;
189	34.31	0.0364	146.6	-0.0137	37.57	0.168	20.89	17.19	1.326	17.23; local maximum rise or fall;
200	34.36	0.0363	150.3	-6.295	37.54	0.164	21.48	18.01	1.466	18.76;
244	35.81	0.0344	163.6	-31.05	37.37	0.163	25.26	21.86	2.2	26.64; end overlap;
245	35.89	0.0343	164.3	-31.59	37.36	0.163	25.44	21.98	2.226	26.91; acute zone;
293	47.12	0.01	225.3	-57.26	36.96	0.152	44.81	31.56	5.024	56.11; bottom hit;
300	52.43	-0.0107	248.5	-59.91	36.89	0.142	51.47	34.57	6.127	69.01;
310	58.76	-0.0368	297.4	-61.54	36.82	0.12	62.74	37.91	7.238	85.88; trap level;
325	65.38	-0.0645	405.9	-60.11	36.74	0.0844	82.07	41.48	7.806	108.7; begin overlap;

```

400    72.25  -0.093  666.0  -20.91  36.69  0.0396  102.0  47.34   6.22  157.7;
437    72.52  -0.0941  693.3   0.334  36.69  0.037   102.9  48.66   5.616 169.7; local maximum rise or
fall;
500    71.43  -0.09   630.2   36.06  36.69  0.0459  104.6  51.22   4.376 193.1;
552    61.72  -0.0523  640.0   50.1   36.63  0.0616  146.9  57.39  -0.819 258.4; trap level;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.25 m
  conc dilutn  width distnce  time
(kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
9.78E-5 10231.1 1564.1  100.0 2291.8  0.0    0.0 1.00E-5 3.00E-4
6.57E-5 15216.1 2326.2  200.0 5069.6  0.0    0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 81; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.001.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.35	28.92	0.0	0.0	0.09	90.0	0.0003	23.13
3.048	0.0737	90.0	36.35	28.92	0.0	0.0	0.0737	90.0	0.0003	23.13
3.962	0.0688	90.0	36.35	28.91	0.0	0.0	0.0688	90.0	0.0003	23.13
4.877	0.0639	90.0	36.35	28.85	0.0	0.0	0.0639	90.0	0.0003	23.15
6.096	0.0573	90.0	36.36	28.78	0.0	0.0	0.0573	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0479	90.0	36.24	28.56	0.0	0.0	0.0479	90.0	0.0003	23.17
9.144	0.0424	90.0	36.29	28.5	0.0	0.0	0.0424	90.0	0.0003	23.22
10.06	0.0382	90.0	36.38	28.13	0.0	0.0	0.0382	90.0	0.0003	23.41
10.97	0.034	90.0	36.41	25.88	0.0	0.0	0.034	90.0	0.0003	24.16
13.07	0.0245	90.0	36.47	25.57	0.0	0.0	0.0245	90.0	0.0003	24.3
13.11	0.024	90.0	36.42	25.33	0.0	0.0	0.024	90.0	0.0003	24.34
14.02	0.012	90.0	36.43	25.05	0.0	0.0	0.012	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

```

Froude number:      37.74; effleunt density (sigma-T)      0.034; effleunt velocity      7.205(m/s);
  Depth  Amb-cur  P-dia  V-angle  Eff-sal  P-speed  Dilutn  x-posn  y-posn  Time
Step    (ft)    (m/s)   (in)   (deg)   (psu)   (m/s)   ( )    (ft)   (ft)   (s)
0       46.0    0.012   6.0    15.0    5.0     7.205   1.0    0.0    0.0    0.0;

```

```

100  43.98  0.0199  42.36  17.29  32.09  1.006  7.096  7.089  0.0463  1.282;
160  37.16  0.0321  130.8  32.19  35.12  0.347  23.23  22.32  0.694  11.38; acute zone;
178  32.27  0.0388  179.6  37.72  35.5  0.261  33.17  29.01  1.384  19.85; trap level;
200  25.84  0.0479  281.7  29.4  35.77  0.16  49.99  38.21  3.062  37.06;
222  22.42  0.0532  384.6  18.27  35.91  0.115  66.26  45.64  5.267  56.44; begin overlap;
256  21.05  0.0556  471.9  -0.442  35.99  0.0935  80.46  53.43  8.546  82.33; local maximum rise or
fall;
300  23.92  0.0512  536.4  -24.44  36.06  0.0889  98.78  63.53  13.99  122.5;
305  24.89  0.0498  554.8  -26.74  36.08  0.0875  104.2  65.21  15.07  130.2; end overlap;
307  25.33  0.0491  563.3  -27.86  36.08  0.0871  106.7  65.91  15.54  133.5; begin overlap;
330  29.82  0.0431  575.1  -40.57  36.1  0.0941  119.8  71.07  19.24  159.6; end overlap;
335  32.26  0.0402  599.0  -41.82  36.12  0.0916  128.8  73.21  20.95  171.6; trap level;
336  32.93  0.0392  609.7  -41.05  36.12  0.0895  131.3  73.79  21.44  175.0; matched energy radial
vel = 0.0345m/s;
338  33.58  0.0377  630.2  -39.26  36.13  0.0861  133.9  74.4  21.95  178.6; begin overlap;
395  34.81  0.0357  725.9  -5.309  36.13  0.0665  135.2  76.26  23.54  189.9; bottom hit;
400  34.81  0.0357  727.3  -2.437  36.13  0.0663  135.3  76.36  23.63  190.5;
405  34.82  0.0357  727.9  0.43  36.13  0.0662  135.3  76.46  23.72  191.1; local maximum rise or
fall;

```

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 18.49 m

concentration	dilution	width	distance	time	concentration	velocity	velocity	velocity
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.15E-4	8636.7	1631.4	100.0	2100.0	0.0	0.0	1.00E-5	3.00E-4
7.60E-5	13162.4	2486.2	200.0	4877.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 82; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.001.db; Diffuser table record 10: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.35	28.92	0.0	0.0	0.09	90.0	0.0003	23.13
3.048	0.0737	90.0	36.35	28.92	0.0	0.0	0.0737	90.0	0.0003	23.13
3.962	0.0688	90.0	36.35	28.91	0.0	0.0	0.0688	90.0	0.0003	23.13
4.877	0.0639	90.0	36.35	28.85	0.0	0.0	0.0639	90.0	0.0003	23.15
6.096	0.0573	90.0	36.36	28.78	0.0	0.0	0.0573	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0479	90.0	36.24	28.56	0.0	0.0	0.0479	90.0	0.0003	23.17
9.144	0.0424	90.0	36.29	28.5	0.0	0.0	0.0424	90.0	0.0003	23.22
10.06	0.0382	90.0	36.38	28.13	0.0	0.0	0.0382	90.0	0.0003	23.41
10.97	0.034	90.0	36.41	25.88	0.0	0.0	0.034	90.0	0.0003	24.16
13.07	0.0245	90.0	36.47	25.57	0.0	0.0	0.0245	90.0	0.0003	24.3

13.11	0.024	90.0	36.42	25.33	0.0	0.0	0.024	90.0	0.0003	24.34
14.02	0.012	90.0	36.43	25.05	0.0	0.0	0.012	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 45.45; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.012	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.01	0.0198	42.57	16.6	33.47	1.003	7.141	7.138	0.0467	1.291;
158	38.18	0.0308	129.5	26.83	35.5	0.342	22.49	22.13	0.659	11.01; acute zone;
177	33.7	0.0369	182.6	32.52	35.79	0.25	32.76	29.73	1.402	20.38; trap level;
200	29.5	0.0429	264.8	20.8	35.94	0.165	45.19	37.52	2.647	33.95;
204	29.2	0.0434	274.8	18.53	35.95	0.158	46.57	38.35	2.815	35.66; begin overlap;
237	28.24	0.0448	324.2	-0.282	35.99	0.132	53.56	44.04	4.121	48.43; local maximum rise or fall;
294	31.62	0.0404	363.5	-32.25	36.05	0.129	65.94	53.84	6.912	74.16; end overlap;
300	33.0	0.0386	378.0	-35.22	36.07	0.127	70.16	55.77	7.571	80.03;
303	34.17	0.0372	391.3	-35.95	36.08	0.123	73.63	57.28	8.124	84.92; trap level;
306	35.07	0.0355	412.5	-33.08	36.09	0.115	76.37	58.51	8.591	89.03; begin overlap;
363	36.25	0.0337	461.7	0.191	36.1	0.0946	77.78	61.71	9.842	100.0; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.73 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	Amb (kg/kg)	Decay (s-1)	Far-sp (m/s)	Far-dir (m0.67/s2)
1.67E-4	5981.1	1246.2	100.0	2248.7	0.0	0.0	1.00E-5	3.00E-4
1.11E-4	8942.0	1863.2	200.0	5026.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 83; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.001.db; Diffuser table record 11: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-sp m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.09	90.0	36.35	28.92	0.0	0.0	0.09	90.0	0.0003	23.13
3.048	0.0737	90.0	36.35	28.92	0.0	0.0	0.0737	90.0	0.0003	23.13
3.962	0.0688	90.0	36.35	28.91	0.0	0.0	0.0688	90.0	0.0003	23.13

4.877	0.0639	90.0	36.35	28.85	0.0	0.0	0.0639	90.0	0.0003	23.15
6.096	0.0573	90.0	36.36	28.78	0.0	0.0	0.0573	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0479	90.0	36.24	28.56	0.0	0.0	0.0479	90.0	0.0003	23.17
9.144	0.0424	90.0	36.29	28.5	0.0	0.0	0.0424	90.0	0.0003	23.22
10.06	0.0382	90.0	36.38	28.13	0.0	0.0	0.0382	90.0	0.0003	23.41
10.97	0.034	90.0	36.41	25.88	0.0	0.0	0.034	90.0	0.0003	24.16
13.07	0.0245	90.0	36.47	25.57	0.0	0.0	0.0245	90.0	0.0003	24.3
13.11	0.024	90.0	36.42	25.33	0.0	0.0	0.024	90.0	0.0003	24.34
14.02	0.012	90.0	36.43	25.05	0.0	0.0	0.012	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 78.38; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.012	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.04	0.0197	42.88	15.54	35.54	0.997	7.21	7.211	0.0472	1.305;
156	39.51	0.029	128.8	18.54	36.15	0.335	21.84	22.08	0.63	10.74; acute zone;
181	35.32	0.0347	209.1	20.83	36.26	0.208	35.84	33.57	1.77	25.35; trap level;
196	33.56	0.0374	259.8	12.74	36.28	0.166	43.47	38.98	2.598	34.86; begin overlap;
200	33.41	0.0376	266.4	10.41	36.28	0.161	44.37	39.7	2.724	36.26;
219	33.17	0.038	284.8	-0.548	36.29	0.15	47.01	42.48	3.236	41.86; local maximum rise or fall;
255	34.45	0.0363	310.8	-20.59	36.3	0.142	53.25	48.27	4.43	54.54; end overlap;
262	35.77	0.0348	334.8	-23.08	36.31	0.133	58.45	51.36	5.172	62.2; trap level;
266	36.56	0.0334	358.5	-20.22	36.31	0.124	61.84	53.3	5.683	67.39; begin overlap;
300	37.91	0.0314	415.0	-0.691	36.33	0.104	69.39	60.05	7.63	87.04;
302	37.91	0.0314	416.7	0.453	36.33	0.104	69.68	60.39	7.735	88.09; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.59 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
1.80E-4	5561.0	1167.5	100.0	2262.3	0.0	0.0	1.00E-5	3.00E-4	
1.20E-4	8300.2	1742.5	200.0	5040.0	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 84; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.001.db; Diffuser table record 12: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spdx	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.35	28.92	0.0	0.0	0.09	90.0	0.0003	23.13
3.048	0.0737	90.0	36.35	28.92	0.0	0.0	0.0737	90.0	0.0003	23.13
3.962	0.0688	90.0	36.35	28.91	0.0	0.0	0.0688	90.0	0.0003	23.13
4.877	0.0639	90.0	36.35	28.85	0.0	0.0	0.0639	90.0	0.0003	23.15
6.096	0.0573	90.0	36.36	28.78	0.0	0.0	0.0573	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0479	90.0	36.24	28.56	0.0	0.0	0.0479	90.0	0.0003	23.17
9.144	0.0424	90.0	36.29	28.5	0.0	0.0	0.0424	90.0	0.0003	23.22
10.06	0.0382	90.0	36.38	28.13	0.0	0.0	0.0382	90.0	0.0003	23.41
10.97	0.034	90.0	36.41	25.88	0.0	0.0	0.034	90.0	0.0003	24.16
13.07	0.0245	90.0	36.47	25.57	0.0	0.0	0.0245	90.0	0.0003	24.3
13.11	0.024	90.0	36.42	25.33	0.0	0.0	0.024	90.0	0.0003	24.34
14.02	0.012	90.0	36.43	25.05	0.0	0.0	0.012	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -45.99; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.012	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	40.72	0.0273	43.8	43.73	39.69	0.974	7.349	5.366	0.0616	1.327;
174	30.74	0.0413	163.9	18.6	37.41	0.23	24.01	18.89	1.139	13.94; begin overlap;
200	30.18	0.0421	186.7	3.672	37.3	0.197	26.62	21.73	1.566	18.19;
203	30.16	0.0421	188.4	1.954	37.29	0.196	26.84	22.02	1.613	18.65; acute zone;
207	30.16	0.0421	190.4	-0.335	37.28	0.194	27.12	22.41	1.676	19.27; local maximum rise or fall;
272	32.89	0.0385	211.4	-37.12	37.09	0.197	33.83	29.38	2.98	31.59; end overlap;
295	39.39	0.03	263.3	-45.47	36.91	0.168	45.82	35.9	4.667	46.91; trap level;
300	41.98	0.0265	291.2	-44.66	36.87	0.151	50.59	38.37	5.437	53.97;
306	44.99	0.0175	330.8	-41.53	36.83	0.13	56.2	41.41	6.468	63.62; bottom hit;
314	46.8	0.0095	362.6	-36.71	36.8	0.116	59.35	43.51	7.213	70.8; begin overlap;
378	50.23	-0.00493	436.5	0.321	36.78	0.0865	63.61	52.06	10.29	102.0; local maximum rise or fall;

400 49.93 -0.00382 435.9 12.89 36.78 0.0879 64.26 54.4 11.13 110.8;
 454 44.66 0.0163 410.2 43.27 36.75 0.108 70.0 62.56 14.06 142.6; end overlap;
 464 39.72 0.0279 443.4 46.73 36.71 0.103 79.46 67.0 15.78 162.2; trap level;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.26 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.63E-4 6118.2 1198.6 100.0 2195.0 0.0 0.0 1.00E-5 3.00E-4
 1.08E-4 9208.7 1804.0 200.0 4972.8 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 85; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.002.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.048	0.147	90.0	36.35	28.92	0.0	0.0	0.147	90.0	0.0003	23.13
3.962	0.138	90.0	36.35	28.91	0.0	0.0	0.138	90.0	0.0003	23.13
4.877	0.128	90.0	36.35	28.85	0.0	0.0	0.128	90.0	0.0003	23.15
6.096	0.115	90.0	36.36	28.78	0.0	0.0	0.115	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.0958	90.0	36.24	28.56	0.0	0.0	0.0958	90.0	0.0003	23.17
9.144	0.0847	90.0	36.29	28.5	0.0	0.0	0.0847	90.0	0.0003	23.22
10.06	0.0764	90.0	36.38	28.13	0.0	0.0	0.0764	90.0	0.0003	23.41
10.97	0.0681	90.0	36.41	25.88	0.0	0.0	0.0681	90.0	0.0003	24.16
13.07	0.049	90.0	36.47	25.57	0.0	0.0	0.049	90.0	0.0003	24.3
13.11	0.048	90.0	36.42	25.33	0.0	0.0	0.048	90.0	0.0003	24.34
14.02	0.024	90.0	36.43	25.05	0.0	0.0	0.024	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	28.0	1.0

Simulation:

Froude number: 12.58; effleunt density (sigma-T) 0.034; effleunt velocity 2.402(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time
 (ft) (m/s) (in) (deg) (psu) (m/s) () (ft) (ft) (s)
 0 46.0 0.024 6.0 15.0 5.0 2.402 1.0 0.0 0.0 0.0;
 100 43.71 0.0419 40.35 30.0 32.09 0.371 7.096 5.941 0.219 3.074;
 182 32.77 0.0766 138.5 58.03 35.57 0.159 35.91 14.49 3.087 22.88; trap level;

196	30.82	0.0822	175.3	52.03	35.74	0.127	45.88	15.42	4.073	28.01; begin overlap;
200	30.4	0.0833	184.7	50.13	35.77	0.121	48.42	15.63	4.341	29.34;
278	26.06	0.0956	293.6	7.638	35.96	0.0789	78.79	19.03	11.14	59.41; acute zone;
292	25.97	0.0959	299.0	-0.309	35.97	0.0786	81.24	19.61	12.63	65.61; local maximum rise or
fall;										
300	26.02	0.0958	300.5	-4.861	35.97	0.079	82.45	19.95	13.53	69.34;
333	27.47	0.0921	308.5	-22.98	36.01	0.087	95.29	21.66	18.46	89.4; end overlap;
355	31.52	0.0811	371.1	-26.19	36.1	0.0909	145.4	23.57	26.36	119.9; trap level;
359	32.16	0.0791	388.1	-23.72	36.12	0.0889	155.7	23.83	27.73	125.1; begin overlap;
361	32.38	0.0784	394.4	-22.55	36.12	0.088	159.2	23.92	28.24	127.1; matched energy radial

vel = 0.0223m/s;

400	33.62	0.0747	430.1	0.4	36.14	0.0809	173.0	24.78	33.37	146.6; local maximum rise or
fall;										

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.92 m

conc	dilutn	width	distnce	time						
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
7.07E-5	14144.9	1234.6	100.0	2425.9	0.0	0.0	1.00E-5	3.00E-4		
4.83E-5	20716.2	1808.1	200.0	5203.6	0.0	0.0	1.00E-5	3.00E-4		

count: 2

/ UM3.

Case 86; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.002.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.048	0.147	90.0	36.35	28.92	0.0	0.0	0.147	90.0	0.0003	23.13
3.962	0.138	90.0	36.35	28.91	0.0	0.0	0.138	90.0	0.0003	23.13
4.877	0.128	90.0	36.35	28.85	0.0	0.0	0.128	90.0	0.0003	23.15
6.096	0.115	90.0	36.36	28.78	0.0	0.0	0.115	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.0958	90.0	36.24	28.56	0.0	0.0	0.0958	90.0	0.0003	23.17
9.144	0.0847	90.0	36.29	28.5	0.0	0.0	0.0847	90.0	0.0003	23.22
10.06	0.0764	90.0	36.38	28.13	0.0	0.0	0.0764	90.0	0.0003	23.41
10.97	0.0681	90.0	36.41	25.88	0.0	0.0	0.0681	90.0	0.0003	24.16
13.07	0.049	90.0	36.47	25.57	0.0	0.0	0.049	90.0	0.0003	24.3
13.11	0.048	90.0	36.42	25.33	0.0	0.0	0.048	90.0	0.0003	24.34
14.02	0.024	90.0	36.43	25.05	0.0	0.0	0.024	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
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(in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 1.0 15.0 28.0 1.0

Simulation:

Froude number: 15.15; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.024	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	43.86	0.0407	41.2	26.01	33.47	0.358	7.141	6.077	0.225	3.164;
182	33.83	0.0737	149.8	52.64	35.84	0.137	36.16	15.74	3.442	25.83; trap level;
188	33.08	0.0759	165.5	49.94	35.9	0.124	39.99	16.19	3.853	28.1; begin overlap;
200	32.08	0.0788	189.7	43.8	35.95	0.107	45.08	16.82	4.538	31.73;
278	30.02	0.0847	251.4	-0.498	36.02	0.0752	54.94	19.46	8.177	49.83; local maximum rise or fall;
300	30.16	0.0843	250.0	-13.04	36.02	0.0771	55.62	20.07	9.098	54.31; acute zone;
345	32.2	0.079	243.8	-37.49	36.06	0.0938	64.22	22.0	12.27	69.43; end overlap;
355	33.92	0.0743	267.8	-37.94	36.12	0.0932	77.98	22.94	14.22	78.37; trap level;
357	34.18	0.0734	274.5	-36.69	36.12	0.0914	80.38	23.07	14.54	79.8; begin overlap;
400	35.56	0.0693	318.3	-11.43	36.15	0.0743	87.22	24.08	17.09	91.27;
420	35.63	0.0691	322.6	0.0732	36.15	0.0728	87.58	24.36	17.8	94.45; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.19 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.24E-4	8037.9	1039.3	100.0	2522.4	0.0	0.0	1.00E-5	3.00E-4
8.58E-5	11651.3	1506.5	200.0	5300.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 87; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.002.db; Diffuser table record 3: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.048	0.147	90.0	36.35	28.92	0.0	0.0	0.147	90.0	0.0003	23.13
3.962	0.138	90.0	36.35	28.91	0.0	0.0	0.138	90.0	0.0003	23.13
4.877	0.128	90.0	36.35	28.85	0.0	0.0	0.128	90.0	0.0003	23.15
6.096	0.115	90.0	36.36	28.78	0.0	0.0	0.115	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.0958	90.0	36.24	28.56	0.0	0.0	0.0958	90.0	0.0003	23.17
9.144	0.0847	90.0	36.29	28.5	0.0	0.0	0.0847	90.0	0.0003	23.22
10.06	0.0764	90.0	36.38	28.13	0.0	0.0	0.0764	90.0	0.0003	23.41

10.97	0.0681	90.0	36.41	25.88	0.0	0.0	0.0681	90.0	0.0003	24.16
13.07	0.049	90.0	36.47	25.57	0.0	0.0	0.049	90.0	0.0003	24.3
13.11	0.048	90.0	36.42	25.33	0.0	0.0	0.048	90.0	0.0003	24.34
14.02	0.024	90.0	36.43	25.05	0.0	0.0	0.024	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 26.13; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.024	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.13	0.0386	42.43	18.97	35.54	0.34	7.21	6.278	0.234	3.299;
194	36.16	0.0674	212.7	31.22	36.29	0.0857	45.21	19.9	5.51	40.55; begin overlap;
199	35.72	0.0686	226.0	30.03	36.3	0.0825	49.13	20.4	6.062	43.7; trap level;
200	35.63	0.0689	228.5	29.67	36.3	0.0819	49.84	20.49	6.172	44.32;
206	35.23	0.0701	241.0	26.7	36.31	0.0785	53.06	20.97	6.761	47.6; acute zone;
253	34.44	0.0724	268.7	-0.456	36.32	0.0691	57.65	22.72	9.133	60.56; local maximum rise or fall;
300	35.43	0.0699	264.8	-26.36	36.32	0.0763	61.74	24.58	11.82	75.02;
302	35.64	0.0694	268.6	-26.83	36.32	0.0763	63.72	24.81	12.18	76.93; end overlap;
305	36.0	0.0684	277.9	-26.14	36.33	0.0753	67.62	25.18	12.8	80.17; trap level;
306	36.1	0.0681	281.0	-25.63	36.33	0.0748	68.7	25.27	12.97	81.05; begin overlap;
353	37.92	0.0628	349.4	0.154	36.35	0.0652	92.05	28.71	20.27	118.4; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.88 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.23E-4	8156.7	1087.0	100.0	2480.2	0.0	0.0	1.00E-5	3.00E-4
8.42E-5	11876.1	1582.6	200.0	5258.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 88; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.002.db; Diffuser table record 4: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13

3.048	0.147	90.0	36.35	28.92	0.0	0.0	0.147	90.0	0.0003	23.13
3.962	0.138	90.0	36.35	28.91	0.0	0.0	0.138	90.0	0.0003	23.13
4.877	0.128	90.0	36.35	28.85	0.0	0.0	0.128	90.0	0.0003	23.15
6.096	0.115	90.0	36.36	28.78	0.0	0.0	0.115	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.0958	90.0	36.24	28.56	0.0	0.0	0.0958	90.0	0.0003	23.17
9.144	0.0847	90.0	36.29	28.5	0.0	0.0	0.0847	90.0	0.0003	23.22
10.06	0.0764	90.0	36.38	28.13	0.0	0.0	0.0764	90.0	0.0003	23.41
10.97	0.0681	90.0	36.41	25.88	0.0	0.0	0.0681	90.0	0.0003	24.16
13.07	0.049	90.0	36.47	25.57	0.0	0.0	0.049	90.0	0.0003	24.3
13.11	0.048	90.0	36.42	25.33	0.0	0.0	0.048	90.0	0.0003	24.34
14.02	0.024	90.0	36.43	25.05	0.0	0.0	0.024	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	28.0	1.0

Simulation:

Froude number: -15.33; effleunt density (sigma-T) 41.53; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.024	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	41.78	0.0519	46.79	33.1	39.69	0.283	7.349	4.837	0.315	3.516;
132	40.66	0.0551	73.88	15.45	38.65	0.17	10.86	7.17	0.796	7.284; begin overlap;
160	40.47	0.0557	87.16	-0.321	38.34	0.143	12.63	8.565	1.203	10.2; local maximum rise or fall;
200	40.89	0.0546	96.59	-22.88	38.07	0.136	14.71	10.42	1.852	14.67;
230	42.01	0.0516	104.2	-39.42	37.81	0.14	17.61	12.05	2.549	19.31; end overlap;
272	48.18	0.00912	130.0	-61.74	37.25	0.152	29.56	15.94	4.94	35.39; bottom hit;
300	57.77	-0.0681	180.0	-74.23	36.93	0.132	50.13	19.14	6.955	56.58;
314	60.62	-0.0917	214.7	-75.7	36.84	0.116	62.34	19.87	6.978	63.86; begin overlap;
384	69.34	-0.162	334.1	-43.39	36.67	0.0962	124.0	21.81	2.89	94.53; trap level, acute zone;
400	71.02	-0.175	351.4	-34.59	36.65	0.1	142.4	22.17	0.819	102.9;
434	74.35	-0.202	387.6	-15.79	36.61	0.121	208.3	22.93	-6.667	125.9; end overlap;
464	76.82	-0.223	443.5	0.447	36.57	0.157	353.8	24.07	-33.55	183.6; local maximum rise or fall;
487	73.15	-0.195	521.8	5.002	36.56	0.177	557.8	25.2	-82.76	272.3; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.25 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.55E-5	39273.3	1289.7	100.0	2045.3	0.0	0.0	1.00E-5	3.00E-4

1.66E-5 60306.5 1980.3 200.0 4823.1 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 89; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.002.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.048	0.147	90.0	36.35	28.92	0.0	0.0	0.147	90.0	0.0003	23.13
3.962	0.138	90.0	36.35	28.91	0.0	0.0	0.138	90.0	0.0003	23.13
4.877	0.128	90.0	36.35	28.85	0.0	0.0	0.128	90.0	0.0003	23.15
6.096	0.115	90.0	36.36	28.78	0.0	0.0	0.115	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.0958	90.0	36.24	28.56	0.0	0.0	0.0958	90.0	0.0003	23.17
9.144	0.0847	90.0	36.29	28.5	0.0	0.0	0.0847	90.0	0.0003	23.22
10.06	0.0764	90.0	36.38	28.13	0.0	0.0	0.0764	90.0	0.0003	23.41
10.97	0.0681	90.0	36.41	25.88	0.0	0.0	0.0681	90.0	0.0003	24.16
13.07	0.049	90.0	36.47	25.57	0.0	0.0	0.049	90.0	0.0003	24.3
13.11	0.048	90.0	36.42	25.33	0.0	0.0	0.048	90.0	0.0003	24.34
14.02	0.024	90.0	36.43	25.05	0.0	0.0	0.024	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 25.16; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.024	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	43.99	0.0397	42.06	19.69	32.09	0.681	7.096	6.662	0.128	1.78;
180	33.25	0.0751	168.9	46.47	35.54	0.206	34.51	22.02	2.805	20.63; acute zone;
182	32.78	0.0764	175.2	46.23	35.57	0.199	35.9	22.43	2.979	21.61; trap level;
200	29.48	0.0858	240.9	39.52	35.77	0.144	48.97	25.49	4.637	30.34; begin overlap;
276	25.37	0.0976	380.0	-0.368	35.96	0.0933	77.99	33.37	12.45	64.97; local maximum rise or fall;
300	25.94	0.0961	396.2	-13.67	35.99	0.0946	85.73	36.0	15.96	79.43;
326	28.31	0.0899	423.0	-26.85	36.03	0.1	103.8	39.2	21.0	99.45; end overlap;
341	31.82	0.0804	491.8	-28.45	36.1	0.0984	138.6	41.91	26.77	121.6; trap level;

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344    32.41  0.0785  509.7  -26.71  36.11  0.0962  145.5  42.33  27.85  125.7; begin overlap;
345    32.57   0.078  514.3  -26.13  36.11  0.0955  147.1  42.44  28.13  126.7; matched energy radial
vel = 0.0314m/s;
390    34.06  0.0735  565.2   0.446  36.13  0.0849  156.8  44.2   32.91  145.0; local maximum rise or
fall;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of      14.36 m
  conc dilutn  width distnce  time
(kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
8.75E-5 11428.2  1445.8  100.0  2311.2  0.0    0.0 1.00E-5 3.00E-4
5.90E-5 16957.5  2145.4  200.0  5089.0  0.0    0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 90; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.002.db; Diffuser table record 6: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.048	0.147	90.0	36.35	28.92	0.0	0.0	0.147	90.0	0.0003	23.13
3.962	0.138	90.0	36.35	28.91	0.0	0.0	0.138	90.0	0.0003	23.13
4.877	0.128	90.0	36.35	28.85	0.0	0.0	0.128	90.0	0.0003	23.15
6.096	0.115	90.0	36.36	28.78	0.0	0.0	0.115	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.0958	90.0	36.24	28.56	0.0	0.0	0.0958	90.0	0.0003	23.17
9.144	0.0847	90.0	36.29	28.5	0.0	0.0	0.0847	90.0	0.0003	23.22
10.06	0.0764	90.0	36.38	28.13	0.0	0.0	0.0764	90.0	0.0003	23.41
10.97	0.0681	90.0	36.41	25.88	0.0	0.0	0.0681	90.0	0.0003	24.16
13.07	0.049	90.0	36.47	25.57	0.0	0.0	0.049	90.0	0.0003	24.3
13.11	0.048	90.0	36.42	25.33	0.0	0.0	0.048	90.0	0.0003	24.34
14.02	0.024	90.0	36.43	25.05	0.0	0.0	0.024	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	28.0	1.0

Simulation:

```

Froude number:          30.3; effleunt density (sigma-T)      7.486; effleunt velocity      4.804(m/s);
  Depth  Amb-cur  P-dia  V-angle  Eff-sal  P-speed  Dilutn  x-posn  y-posn  Time
Step    (ft)    (m/s)   (in)   (deg)   (psu)   (m/s)   ( )    (ft)   (ft)   (s)
0       46.0    0.024   6.0    15.0    15.0    4.804   1.0    0.0    0.0    0.0;

```

100	44.04	0.0394	42.36	18.3	33.47	0.675	7.141	6.724	0.129	1.798;
175	35.49	0.0689	164.0	39.88	35.76	0.2	31.48	22.01	2.572	19.69; acute zone;
183	33.78	0.0737	188.3	40.31	35.86	0.177	36.89	23.88	3.298	23.98; trap level;
193	32.23	0.0783	223.1	35.81	35.93	0.148	43.16	25.64	4.151	28.72; begin overlap;
200	31.58	0.0801	241.4	32.24	35.96	0.135	46.17	26.48	4.624	31.24;
258	29.77	0.0854	304.8	-0.46	36.02	0.103	55.42	31.26	7.891	47.72; local maximum rise or
fall;										
300	30.73	0.0828	307.5	-24.16	36.04	0.109	59.53	34.43	10.39	59.87;
321	32.79	0.0774	324.1	-34.64	36.08	0.113	69.0	37.01	12.72	70.83; end overlap;
328	34.23	0.0736	350.8	-34.83	36.11	0.108	78.15	38.39	14.21	77.65; trap level;
330	34.52	0.0725	360.0	-33.61	36.12	0.106	80.11	38.67	14.53	79.12; begin overlap;
388	35.94	0.0682	412.7	0.274	36.14	0.0862	84.9	41.11	17.53	92.72; local maximum rise or
fall;										

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.48 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.43E-4	7000.6	1194.6	100.0	2399.4	0.0	0.0	1.00E-5	3.00E-4
9.72E-5	10283.0	1754.8	200.0	5177.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 91; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.002.db; Diffuser table record 7: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.048	0.147	90.0	36.35	28.92	0.0	0.0	0.147	90.0	0.0003	23.13
3.962	0.138	90.0	36.35	28.91	0.0	0.0	0.138	90.0	0.0003	23.13
4.877	0.128	90.0	36.35	28.85	0.0	0.0	0.128	90.0	0.0003	23.15
6.096	0.115	90.0	36.36	28.78	0.0	0.0	0.115	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.0958	90.0	36.24	28.56	0.0	0.0	0.0958	90.0	0.0003	23.17
9.144	0.0847	90.0	36.29	28.5	0.0	0.0	0.0847	90.0	0.0003	23.22
10.06	0.0764	90.0	36.38	28.13	0.0	0.0	0.0764	90.0	0.0003	23.41
10.97	0.0681	90.0	36.41	25.88	0.0	0.0	0.0681	90.0	0.0003	24.16
13.07	0.049	90.0	36.47	25.57	0.0	0.0	0.049	90.0	0.0003	24.3
13.11	0.048	90.0	36.42	25.33	0.0	0.0	0.048	90.0	0.0003	24.34
14.02	0.024	90.0	36.43	25.05	0.0	0.0	0.024	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
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(in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 2.0 30.0 28.0 1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.024	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.12	0.0388	42.81	16.12	35.54	0.667	7.21	6.816	0.131	1.826;
169	38.73	0.0602	161.6	22.73	36.21	0.184	28.26	22.02	2.304	18.63; acute zone;
192	35.57	0.0689	244.2	23.94	36.29	0.127	44.56	28.7	4.898	34.57; trap level;
198	34.94	0.0708	267.7	21.4	36.3	0.117	48.94	30.02	5.619	38.68; begin overlap;
200	34.81	0.0712	273.0	20.35	36.3	0.115	49.85	30.32	5.794	39.66;
236	34.06	0.0735	306.9	-0.28	36.31	0.101	55.02	33.55	7.852	50.96; local maximum rise or fall;
279	35.48	0.0699	327.0	-23.13	36.32	0.102	63.18	37.84	10.93	67.39; end overlap;
282	35.89	0.0688	339.9	-22.98	36.33	0.0987	66.64	38.58	11.54	70.6; trap level;
285	36.22	0.0677	353.3	-21.57	36.33	0.0956	69.6	39.18	12.07	73.33; begin overlap;
300	37.22	0.0648	393.3	-13.73	36.34	0.0867	77.97	41.48	14.27	84.56;
325	37.79	0.0631	430.8	0.236	36.35	0.0805	86.53	44.84	17.9	103.0; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.94 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.43E-4	6988.8	1221.3	100.0	2368.9	0.0	0.0	1.00E-5	3.00E-4
9.71E-5	10301.0	1800.2	200.0	5146.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 92; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.002.db; Diffuser table record 8: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.048	0.147	90.0	36.35	28.92	0.0	0.0	0.147	90.0	0.0003	23.13
3.962	0.138	90.0	36.35	28.91	0.0	0.0	0.138	90.0	0.0003	23.13
4.877	0.128	90.0	36.35	28.85	0.0	0.0	0.128	90.0	0.0003	23.15
6.096	0.115	90.0	36.36	28.78	0.0	0.0	0.115	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.0958	90.0	36.24	28.56	0.0	0.0	0.0958	90.0	0.0003	23.17
9.144	0.0847	90.0	36.29	28.5	0.0	0.0	0.0847	90.0	0.0003	23.22
10.06	0.0764	90.0	36.38	28.13	0.0	0.0	0.0764	90.0	0.0003	23.41

10.97	0.0681	90.0	36.41	25.88	0.0	0.0	0.0681	90.0	0.0003	24.16
13.07	0.049	90.0	36.47	25.57	0.0	0.0	0.049	90.0	0.0003	24.3
13.11	0.048	90.0	36.42	25.33	0.0	0.0	0.048	90.0	0.0003	24.34
14.02	0.024	90.0	36.43	25.05	0.0	0.0	0.024	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -30.66; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.024	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	41.13	0.0536	44.26	42.23	39.69	0.635	7.349	5.041	0.168	1.843;
160	35.35	0.0698	137.0	19.59	37.6	0.187	20.53	13.45	1.754	12.06; begin overlap;
195	34.82	0.0714	165.3	-0.171	37.41	0.153	24.24	16.28	2.772	17.71; local maximum rise or fall;
200	34.83	0.0714	167.5	-3.007	37.4	0.151	24.6	16.64	2.914	18.48;
252	36.62	0.0666	192.3	-31.63	37.18	0.147	31.39	21.15	4.983	29.41; end overlap;
255	36.89	0.0659	195.6	-33.18	37.16	0.146	32.33	21.52	5.185	30.45; acute zone;
295	46.24	0.0265	273.5	-51.64	36.84	0.133	57.8	28.82	10.74	59.18; bottom hit;
300	49.85	0.000109	294.7	-52.99	36.8	0.126	63.81	30.82	12.67	70.01;
305	53.81	-0.0334	322.1	-54.02	36.77	0.115	70.46	32.91	14.7	82.49; trap level;
317	58.75	-0.0761	422.1	-55.74	36.71	0.0836	88.07	35.59	16.91	101.1; begin overlap;
400	65.63	-0.133	760.4	-18.2	36.66	0.0329	110.5	41.52	18.35	155.4;
432	65.78	-0.134	784.9	0.172	36.66	0.0311	110.9	42.48	18.36	164.8; local maximum rise or fall;
500	64.81	-0.127	705.5	38.67	36.66	0.0394	112.5	44.84	18.32	188.0;
561	55.47	-0.0543	665.4	56.09	36.62	0.0566	145.9	50.81	15.9	253.9; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.90 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
9.90E-5	10103.0	1617.4	100.0	2327.0	0.0	0.0	1.00E-5	3.00E-4
6.68E-5	14963.3	2395.6	200.0	5104.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 93; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.002.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.048	0.147	90.0	36.35	28.92	0.0	0.0	0.147	90.0	0.0003	23.13
3.962	0.138	90.0	36.35	28.91	0.0	0.0	0.138	90.0	0.0003	23.13
4.877	0.128	90.0	36.35	28.85	0.0	0.0	0.128	90.0	0.0003	23.15
6.096	0.115	90.0	36.36	28.78	0.0	0.0	0.115	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.0958	90.0	36.24	28.56	0.0	0.0	0.0958	90.0	0.0003	23.17
9.144	0.0847	90.0	36.29	28.5	0.0	0.0	0.0847	90.0	0.0003	23.22
10.06	0.0764	90.0	36.38	28.13	0.0	0.0	0.0764	90.0	0.0003	23.41
10.97	0.0681	90.0	36.41	25.88	0.0	0.0	0.0681	90.0	0.0003	24.16
13.07	0.049	90.0	36.47	25.57	0.0	0.0	0.049	90.0	0.0003	24.3
13.11	0.048	90.0	36.42	25.33	0.0	0.0	0.048	90.0	0.0003	24.34
14.02	0.024	90.0	36.43	25.05	0.0	0.0	0.024	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

Froude number: 37.74; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.024	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.04	0.0393	42.36	17.21	32.09	1.006	7.096	6.895	0.0891	1.239;
166	37.12	0.0644	146.0	32.7	35.26	0.314	26.16	22.19	1.505	12.09; acute zone;
184	33.0	0.0757	199.4	37.47	35.61	0.239	37.35	27.7	2.805	19.94; trap level;
200	29.51	0.0857	270.1	31.78	35.79	0.175	50.01	32.35	4.524	29.07;
208	28.49	0.0886	301.2	28.09	35.84	0.156	55.41	33.97	5.304	32.91; begin overlap;
262	25.8	0.0964	421.6	-0.375	35.96	0.113	77.69	42.55	11.15	58.99; local maximum rise or fall;
300	27.48	0.092	460.3	-21.03	36.0	0.113	92.19	48.53	16.63	81.64;
316	29.87	0.0857	501.5	-28.2	36.05	0.113	109.5	51.88	20.4	96.68; end overlap;
325	32.26	0.0793	554.9	-28.85	36.09	0.108	129.1	54.39	23.87	110.2; trap level;
328	32.94	0.0771	576.9	-27.3	36.1	0.105	135.5	55.09	24.94	114.4; begin overlap;
329	33.12	0.0766	582.6	-26.74	36.1	0.104	137.0	55.28	25.24	115.5; matched energy radial
vel = 0.0381m/s;										
375	34.47	0.0723	637.0	0.514	36.11	0.0915	143.1	57.7	29.18	130.9; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.18 m
 conc dilutn width distnce time

(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.01E-4 9845.3 1538.2 100.0 2230.4 0.0 0.0 1.00E-5 3.00E-4
 6.78E-5 14752.4 2304.9 200.0 5008.1 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 94; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.002.db; Diffuser table record 10: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.048	0.147	90.0	36.35	28.92	0.0	0.0	0.147	90.0	0.0003	23.13
3.962	0.138	90.0	36.35	28.91	0.0	0.0	0.138	90.0	0.0003	23.13
4.877	0.128	90.0	36.35	28.85	0.0	0.0	0.128	90.0	0.0003	23.15
6.096	0.115	90.0	36.36	28.78	0.0	0.0	0.115	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.0958	90.0	36.24	28.56	0.0	0.0	0.0958	90.0	0.0003	23.17
9.144	0.0847	90.0	36.29	28.5	0.0	0.0	0.0847	90.0	0.0003	23.22
10.06	0.0764	90.0	36.38	28.13	0.0	0.0	0.0764	90.0	0.0003	23.41
10.97	0.0681	90.0	36.41	25.88	0.0	0.0	0.0681	90.0	0.0003	24.16
13.07	0.049	90.0	36.47	25.57	0.0	0.0	0.049	90.0	0.0003	24.3
13.11	0.048	90.0	36.42	25.33	0.0	0.0	0.048	90.0	0.0003	24.34
14.02	0.024	90.0	36.43	25.05	0.0	0.0	0.024	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 45.45; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.024	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.06	0.0392	42.57	16.54	33.47	1.003	7.141	6.942	0.0897	1.248;
164	38.12	0.0617	144.7	27.24	35.61	0.309	25.32	22.09	1.44	11.77; acute zone;
185	33.91	0.0733	210.7	32.2	35.88	0.22	38.38	29.05	3.04	21.62; trap level;
200	31.55	0.0802	269.6	25.37	35.98	0.17	48.21	33.0	4.432	29.25;
201	31.46	0.0804	272.9	24.85	35.98	0.168	48.72	33.18	4.508	29.65; begin overlap;
246	29.82	0.0852	345.7	-0.22	36.05	0.13	60.07	39.44	7.584	45.04; local maximum rise or fall;

300 32.78 0.0775 388.8 -29.54 36.1 0.129 75.58 47.27 12.49 68.15;
 301 32.96 0.077 391.8 -29.95 36.11 0.129 76.55 47.51 12.67 68.96; end overlap;
 307 34.35 0.0734 420.1 -30.39 36.13 0.122 84.59 49.34 14.13 75.58; trap level;
 308 34.56 0.0727 426.9 -29.71 36.14 0.12 85.93 49.62 14.37 76.65; matched energy radial
 vel = 0.031m/s;
 309 34.7 0.0721 432.4 -29.02 36.14 0.119 86.79 49.82 14.54 77.41; begin overlap;
 359 36.0 0.0681 481.8 0.256 36.15 0.101 90.81 53.03 17.38 90.19; local maximum rise or
 fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.24 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.43E-4 6971.0 1298.1 100.0 2305.3 0.0 0.0 1.00E-5 3.00E-4
 9.66E-5 10351.0 1927.5 200.0 5083.1 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 95; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.002.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.048	0.147	90.0	36.35	28.92	0.0	0.0	0.147	90.0	0.0003	23.13
3.962	0.138	90.0	36.35	28.91	0.0	0.0	0.138	90.0	0.0003	23.13
4.877	0.128	90.0	36.35	28.85	0.0	0.0	0.128	90.0	0.0003	23.15
6.096	0.115	90.0	36.36	28.78	0.0	0.0	0.115	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.0958	90.0	36.24	28.56	0.0	0.0	0.0958	90.0	0.0003	23.17
9.144	0.0847	90.0	36.29	28.5	0.0	0.0	0.0847	90.0	0.0003	23.22
10.06	0.0764	90.0	36.38	28.13	0.0	0.0	0.0764	90.0	0.0003	23.41
10.97	0.0681	90.0	36.41	25.88	0.0	0.0	0.0681	90.0	0.0003	24.16
13.07	0.049	90.0	36.47	25.57	0.0	0.0	0.049	90.0	0.0003	24.3
13.11	0.048	90.0	36.42	25.33	0.0	0.0	0.048	90.0	0.0003	24.34
14.02	0.024	90.0	36.43	25.05	0.0	0.0	0.024	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 78.38; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.024	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.09	0.0389	42.88	15.52	35.54	0.997	7.21	7.012	0.0907	1.261;
162	39.47	0.0581	144.4	18.57	36.18	0.301	24.6	22.15	1.387	11.57; acute zone;
190	35.58	0.0688	245.5	20.24	36.28	0.181	42.83	32.73	3.876	27.15; trap level;
200	34.39	0.0724	290.0	16.0	36.3	0.154	50.45	36.04	5.085	33.99;
201	34.33	0.0726	293.1	15.45	36.3	0.152	50.95	36.25	5.169	34.45; begin overlap;
229	33.72	0.0744	332.6	-0.459	36.31	0.134	57.21	40.26	6.952	44.08; local maximum rise or fall;
265	35.06	0.071	366.9	-19.78	36.32	0.127	66.52	45.76	9.786	58.9; end overlap;
270	35.89	0.0689	392.5	-20.1	36.33	0.12	72.54	47.66	10.94	64.75; trap level;
273	36.27	0.0676	409.8	-18.39	36.33	0.116	75.67	48.58	11.54	67.78; begin overlap;
300	37.5	0.064	472.5	-3.437	36.34	0.101	86.91	53.72	15.26	86.35;
307	37.53	0.0638	481.9	0.513	36.35	0.0991	88.94	54.93	16.2	91.01; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.24 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.47E-4	6807.7	1295.0	100.0	2292.9	0.0	0.0	1.00E-5	3.00E-4
9.88E-5	10123.4	1925.7	200.0	5070.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 96; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.002.db; Diffuser table record 12: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.18	90.0	36.35	28.92	0.0	0.0	0.18	90.0	0.0003	23.13
3.048	0.147	90.0	36.35	28.92	0.0	0.0	0.147	90.0	0.0003	23.13
3.962	0.138	90.0	36.35	28.91	0.0	0.0	0.138	90.0	0.0003	23.13
4.877	0.128	90.0	36.35	28.85	0.0	0.0	0.128	90.0	0.0003	23.15
6.096	0.115	90.0	36.36	28.78	0.0	0.0	0.115	90.0	0.0003	23.18
7.468	0.1	90.0	36.38	28.63	0.0	0.0	0.1	90.0	0.0003	23.25
7.925	0.0958	90.0	36.24	28.56	0.0	0.0	0.0958	90.0	0.0003	23.17
9.144	0.0847	90.0	36.29	28.5	0.0	0.0	0.0847	90.0	0.0003	23.22
10.06	0.0764	90.0	36.38	28.13	0.0	0.0	0.0764	90.0	0.0003	23.41
10.97	0.0681	90.0	36.41	25.88	0.0	0.0	0.0681	90.0	0.0003	24.16
13.07	0.049	90.0	36.47	25.57	0.0	0.0	0.049	90.0	0.0003	24.3
13.11	0.048	90.0	36.42	25.33	0.0	0.0	0.048	90.0	0.0003	24.34
14.02	0.024	90.0	36.43	25.05	0.0	0.0	0.024	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -45.99; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.024	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	40.92	0.0542	43.76	43.76	39.69	0.975	7.349	5.162	0.116	1.264;
171	31.79	0.0796	167.9	22.95	37.36	0.231	25.39	16.88	1.983	12.33; begin overlap;
200	30.95	0.0821	200.9	6.574	37.22	0.188	29.39	19.86	2.954	17.18;
212	30.9	0.0823	208.6	-0.25	37.19	0.181	30.47	20.94	3.342	19.07; local maximum rise or fall;
221	30.94	0.0821	212.9	-5.362	37.17	0.178	31.22	21.72	3.638	20.5; acute zone;
278	33.74	0.0747	235.3	-37.05	37.0	0.185	39.41	27.57	6.183	32.42; end overlap;
292	37.07	0.066	274.7	-40.95	36.88	0.166	49.06	30.96	8.139	41.3; trap level;
300	39.7	0.0588	318.8	-38.86	36.81	0.144	57.49	33.54	9.933	49.45;
311	42.9	0.0496	385.8	-33.54	36.75	0.119	69.16	36.94	12.68	62.2; bottom hit;
315	43.65	0.044	405.6	-31.21	36.74	0.112	72.12	37.82	13.46	65.91; begin overlap;
369	46.29	0.0217	478.5	0.0287	36.71	0.0896	79.16	43.97	19.14	93.7; local maximum rise or fall;
400	45.64	0.0266	475.8	17.7	36.71	0.0927	80.67	46.85	21.85	107.2;
431	42.22	0.05	476.3	34.5	36.68	0.101	88.4	51.45	26.27	129.8; end overlap;
440	38.59	0.0599	538.6	34.86	36.65	0.0929	105.2	54.89	30.03	149.5; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.68 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.30E-4	7683.7	1380.8	100.0	2248.0	0.0	0.0	1.00E-5	3.00E-4
8.71E-5	11488.3	2064.5	200.0	5025.8	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 97; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.003.db; Diffuser table record 1: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.27	90.0	36.35	28.92	0.0	0.0	0.27	90.0	0.0003	23.13
3.048	0.221	90.0	36.35	28.92	0.0	0.0	0.221	90.0	0.0003	23.13
3.962	0.206	90.0	36.35	28.91	0.0	0.0	0.206	90.0	0.0003	23.13

4.877	0.192	90.0	36.35	28.85	0.0	0.0	0.192	90.0	0.0003	23.15
6.096	0.172	90.0	36.36	28.78	0.0	0.0	0.172	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.144	90.0	36.24	28.56	0.0	0.0	0.144	90.0	0.0003	23.17
9.144	0.127	90.0	36.29	28.5	0.0	0.0	0.127	90.0	0.0003	23.22
10.06	0.115	90.0	36.38	28.13	0.0	0.0	0.115	90.0	0.0003	23.41
10.97	0.102	90.0	36.41	25.88	0.0	0.0	0.102	90.0	0.0003	24.16
13.07	0.0735	90.0	36.47	25.57	0.0	0.0	0.0735	90.0	0.0003	24.3
13.11	0.0721	90.0	36.42	25.33	0.0	0.0	0.0721	90.0	0.0003	24.34
14.02	0.036	90.0	36.43	25.05	0.0	0.0	0.036	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	28.0	1.0

Simulation:

Froude number: 12.58; effleunt density (sigma-T) 0.034; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.036	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	43.89	0.0607	40.46	28.96	32.09	0.369	7.096	5.593	0.301	2.858;
196	33.88	0.111	165.9	47.99	35.77	0.146	47.05	13.58	4.847	23.5; begin overlap;
197	33.78	0.111	168.0	47.54	35.78	0.145	47.8	13.62	4.924	23.77; trap level;
200	33.5	0.112	174.3	46.11	35.81	0.141	50.06	13.75	5.16	24.61;
284	29.81	0.128	265.4	-0.317	36.02	0.104	84.9	16.47	13.28	50.38; local maximum rise or fall;
293	29.88	0.128	266.8	-5.434	36.03	0.105	86.44	16.75	14.36	53.63; acute zone;
300	30.0	0.127	267.6	-9.397	36.03	0.106	87.9	16.97	15.25	56.3;
317	30.76	0.124	272.8	-18.67	36.06	0.112	96.25	17.65	18.04	64.57; end overlap;
336	33.52	0.113	316.9	-21.53	36.14	0.118	137.1	18.9	24.81	83.93; trap level;
340	33.98	0.111	329.2	-18.85	36.16	0.116	145.8	19.08	26.05	87.42; begin overlap;
373	34.76	0.107	351.3	0.408	36.17	0.11	156.4	19.68	30.44	99.73; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.92 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
7.24E-5	13807.3	1088.8	100.0	2470.9	0.0	0.0	1.00E-5	3.00E-4	
4.97E-5	20123.2	1586.8	200.0	5248.7	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 98; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.003.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.27	90.0	36.35	28.92	0.0	0.0	0.27	90.0	0.0003	23.13
3.048	0.221	90.0	36.35	28.92	0.0	0.0	0.221	90.0	0.0003	23.13
3.962	0.206	90.0	36.35	28.91	0.0	0.0	0.206	90.0	0.0003	23.13
4.877	0.192	90.0	36.35	28.85	0.0	0.0	0.192	90.0	0.0003	23.15
6.096	0.172	90.0	36.36	28.78	0.0	0.0	0.172	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.144	90.0	36.24	28.56	0.0	0.0	0.144	90.0	0.0003	23.17
9.144	0.127	90.0	36.29	28.5	0.0	0.0	0.127	90.0	0.0003	23.22
10.06	0.115	90.0	36.38	28.13	0.0	0.0	0.115	90.0	0.0003	23.41
10.97	0.102	90.0	36.41	25.88	0.0	0.0	0.102	90.0	0.0003	24.16
13.07	0.0735	90.0	36.47	25.57	0.0	0.0	0.0735	90.0	0.0003	24.3
13.11	0.0721	90.0	36.42	25.33	0.0	0.0	0.0721	90.0	0.0003	24.34
14.02	0.036	90.0	36.43	25.05	0.0	0.0	0.036	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	28.0	1.0

Simulation:

Froude number: 15.15; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.036	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	44.03	0.0591	41.26	25.18	33.47	0.357	7.141	5.71	0.309	2.935;
197	34.97	0.106	179.6	42.36	35.99	0.129	48.5	14.63	5.418	26.55; begin overlap;
200	34.69	0.107	186.1	41.07	36.01	0.126	50.93	14.79	5.695	27.56; trap level;
274	32.15	0.118	251.9	-0.306	36.12	0.0976	71.65	17.0	11.28	46.55; local maximum rise or fall;
300	32.45	0.117	250.9	-15.09	36.13	0.101	73.66	17.66	13.23	52.98; acute zone;
323	33.65	0.112	252.1	-27.35	36.15	0.112	81.56	18.52	15.94	61.79; end overlap;
330	34.61	0.108	268.9	-26.3	36.18	0.112	93.69	19.01	17.75	67.51; trap level;
333	34.92	0.107	277.4	-24.49	36.19	0.11	98.5	19.16	18.39	69.49; begin overlap;
376	36.07	0.102	309.8	0.446	36.22	0.101	111.6	20.18	23.1	84.11; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.87 m
 conc dilutn width distnce time

(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 9.64E-5 10368.8 1010.6 100.0 2518.1 0.0 0.0 1.00E-5 3.00E-4
 6.65E-5 15036.7 1465.6 200.0 5295.9 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 99; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.003.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.27	90.0	36.35	28.92	0.0	0.0	0.27	90.0	0.0003	23.13
3.048	0.221	90.0	36.35	28.92	0.0	0.0	0.221	90.0	0.0003	23.13
3.962	0.206	90.0	36.35	28.91	0.0	0.0	0.206	90.0	0.0003	23.13
4.877	0.192	90.0	36.35	28.85	0.0	0.0	0.192	90.0	0.0003	23.15
6.096	0.172	90.0	36.36	28.78	0.0	0.0	0.172	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.144	90.0	36.24	28.56	0.0	0.0	0.144	90.0	0.0003	23.17
9.144	0.127	90.0	36.29	28.5	0.0	0.0	0.127	90.0	0.0003	23.22
10.06	0.115	90.0	36.38	28.13	0.0	0.0	0.115	90.0	0.0003	23.41
10.97	0.102	90.0	36.41	25.88	0.0	0.0	0.102	90.0	0.0003	24.16
13.07	0.0735	90.0	36.47	25.57	0.0	0.0	0.0735	90.0	0.0003	24.3
13.11	0.0721	90.0	36.42	25.33	0.0	0.0	0.0721	90.0	0.0003	24.34
14.02	0.036	90.0	36.43	25.05	0.0	0.0	0.036	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 26.13; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.036	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.26	0.0564	42.39	18.61	35.54	0.341	7.21	5.885	0.32	3.05;
183	39.51	0.0873	169.8	26.17	36.26	0.106	35.65	15.33	4.546	25.0; begin overlap;
200	38.43	0.0917	206.5	23.52	36.31	0.0972	48.1	16.73	6.397	32.74;
213	37.56	0.0954	237.9	20.32	36.33	0.0934	61.24	17.78	8.308	40.28; end overlap;
226	36.63	0.0992	272.9	16.27	36.35	0.0918	79.09	18.84	10.95	50.2; trap level;
228	36.48	0.0998	278.5	15.59	36.36	0.0917	82.29	19.01	11.45	52.02; acute zone;
241	35.57	0.104	314.3	9.963	36.37	0.0917	104.8	20.09	15.24	65.45; begin overlap;

259 35.3 0.105 328.5 -0.44 36.37 0.0912 113.8 20.85 18.48 76.62; local maximum rise or fall;
 277 35.72 0.104 337.2 -10.18 36.37 0.0935 122.6 21.67 22.2 89.29; end overlap;
 282 36.24 0.102 350.6 -10.66 36.38 0.0944 134.2 22.19 24.84 98.15; trap level;
 300 37.58 0.0957 410.6 -1.555 36.39 0.094 183.3 24.17 37.62 140.3;
 303 37.6 0.0955 417.0 0.127 36.39 0.094 189.0 24.49 40.03 148.1; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.59 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
6.47E-5	15465.5	1198.1	100.0	2380.5	0.0	0.0	1.00E-5	3.00E-4	
4.39E-5	22765.4	1763.5	200.0	5158.3	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 100; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.003.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.27	90.0	36.35	28.92	0.0	0.0	0.27	90.0	0.0003	23.13
3.048	0.221	90.0	36.35	28.92	0.0	0.0	0.221	90.0	0.0003	23.13
3.962	0.206	90.0	36.35	28.91	0.0	0.0	0.206	90.0	0.0003	23.13
4.877	0.192	90.0	36.35	28.85	0.0	0.0	0.192	90.0	0.0003	23.15
6.096	0.172	90.0	36.36	28.78	0.0	0.0	0.172	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.144	90.0	36.24	28.56	0.0	0.0	0.144	90.0	0.0003	23.17
9.144	0.127	90.0	36.29	28.5	0.0	0.0	0.127	90.0	0.0003	23.22
10.06	0.115	90.0	36.38	28.13	0.0	0.0	0.115	90.0	0.0003	23.41
10.97	0.102	90.0	36.41	25.88	0.0	0.0	0.102	90.0	0.0003	24.16
13.07	0.0735	90.0	36.47	25.57	0.0	0.0	0.0735	90.0	0.0003	24.3
13.11	0.0721	90.0	36.42	25.33	0.0	0.0	0.0721	90.0	0.0003	24.34
14.02	0.036	90.0	36.43	25.05	0.0	0.0	0.036	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	28.0	1.0

Simulation:

Froude number: -15.33; effleunt density (sigma-T) 41.53; effleunt velocity 2.402(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time

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Step      (ft)      (m/s)      (in)      (deg)      (psu)      (m/s)      ( )      (ft)      (ft)      (s)
  0        46.0      0.036      6.0       45.0      60.0      2.402      1.0      0.0      0.0      0.0;
 100       42.09     0.0765     46.21     34.25     39.69     0.291     7.349     4.403     0.409     3.125;
 130       41.01     0.0812     74.08     19.13     38.57     0.175     11.24     6.394     1.029     6.394; begin overlap;
 166       40.7      0.0826     93.95     -0.402    38.13     0.138     14.17     8.079     1.834     10.22; local maximum rise or
fall;
 200       41.02     0.0813     103.9     -19.21     37.9      0.132     16.49     9.586     2.733     14.3;
 233       42.23     0.0765     117.2     -36.42     37.58     0.134     21.25     11.32     4.033     20.0; end overlap;
 269       47.38     0.0227     154.3     -53.77     37.09     0.135     37.04     14.45     7.693     36.16; bottom hit;
 299       55.88     -0.0808    208.1     -70.0      36.85     0.116     58.76     17.24     11.38     58.42; begin overlap;
 300       56.04     -0.0827    210.5     -70.42     36.85     0.115     59.51     17.29     11.41     58.85;
 391       65.9      -0.202     330.8     -49.05     36.67     0.0911    115.1     19.6      9.327     93.28; trap level;
 400       66.66     -0.211     335.7     -44.16     36.66     0.0934    121.3     19.77     8.62      96.76;
 452       71.05     -0.264     351.0     -15.57     36.61     0.133     187.9     20.78     0.166     123.4; end overlap;
 465       72.33     -0.279     359.9     -8.624    36.59     0.158     233.5     21.14     -6.195    136.9; acute zone;
 487       73.75     -0.297     393.2     0.174     36.57     0.204     361.0     21.98     -33.04    181.3; local maximum rise or
fall;
 500       72.85     -0.288     425.3     2.923     36.56     0.225     466.9     22.5     -59.93    219.3;
 515       70.49     -0.26      478.5     3.185     36.55     0.238     628.4     23.05     -100.8    272.8; trap level;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.15 m
conc dilutn width distnce
(kg/kg)      (m)      (m)      (hrs) (kg/kg)      (s-1)      (m/s)(m0.67/s2)
2.28E-5 43923.3 1174.0 100.0 1902.6 0.0 0.0 1.00E-5 3.00E-4
1.45E-5 68889.0 1841.3 200.0 4680.3 0.0 0.0 1.00E-5 3.00E-4
count: 2

```

/ UM3.

Case 101; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.003.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.27	90.0	36.35	28.92	0.0	0.0	0.27	90.0	0.0003	23.13
3.048	0.221	90.0	36.35	28.92	0.0	0.0	0.221	90.0	0.0003	23.13
3.962	0.206	90.0	36.35	28.91	0.0	0.0	0.206	90.0	0.0003	23.13
4.877	0.192	90.0	36.35	28.85	0.0	0.0	0.192	90.0	0.0003	23.15
6.096	0.172	90.0	36.36	28.78	0.0	0.0	0.172	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.144	90.0	36.24	28.56	0.0	0.0	0.144	90.0	0.0003	23.17
9.144	0.127	90.0	36.29	28.5	0.0	0.0	0.127	90.0	0.0003	23.22
10.06	0.115	90.0	36.38	28.13	0.0	0.0	0.115	90.0	0.0003	23.41
10.97	0.102	90.0	36.41	25.88	0.0	0.0	0.102	90.0	0.0003	24.16
13.07	0.0735	90.0	36.47	25.57	0.0	0.0	0.0735	90.0	0.0003	24.3

13.11	0.0721	90.0	36.42	25.33	0.0	0.0	0.0721	90.0	0.0003	24.34
14.02	0.036	90.0	36.43	25.05	0.0	0.0	0.036	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 25.16; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.036	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	44.07	0.0587	42.06	19.47	32.09	0.681	7.096	6.42	0.182	1.701;
191	33.52	0.112	200.0	42.76	35.71	0.183	42.88	21.37	4.621	22.05; trap level;
192	33.37	0.112	203.3	42.45	35.72	0.18	43.68	21.5	4.722	22.43; acute zone;
197	32.75	0.115	218.8	40.6	35.77	0.169	47.34	22.03	5.177	24.07; begin overlap;
200	32.43	0.117	227.2	39.39	35.8	0.163	49.33	22.32	5.439	24.99;
276	28.53	0.133	349.6	-0.174	36.0	0.116	82.29	28.33	14.15	52.42; local maximum rise or fall;
300	29.13	0.131	363.7	-13.4	36.03	0.12	91.45	30.36	18.2	64.29;
312	30.1	0.127	381.3	-19.27	36.06	0.124	103.7	31.64	21.14	72.65; end overlap;
330	33.13	0.115	451.7	-20.11	36.14	0.124	146.6	34.09	28.59	93.14; trap level;
333	33.62	0.113	467.2	-18.28	36.15	0.122	155.0	34.46	29.96	96.87; matched energy radial
vel = 0.0354m/s;										
334	33.72	0.112	470.9	-17.6	36.15	0.122	156.6	34.53	30.26	97.69; begin overlap;
364	34.49	0.108	496.0	0.0208	36.16	0.115	164.3	35.64	34.69	109.7; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.60 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
7.92E-5	12627.3	1338.2	100.0	2356.7	0.0	0.0	1.00E-5	3.00E-4
5.36E-5	18638.0	1975.2	200.0	5134.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 102; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.003.db; Diffuser table record 6: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.27	90.0	36.35	28.92	0.0	0.0	0.27	90.0	0.0003	23.13

3.048	0.221	90.0	36.35	28.92	0.0	0.0	0.221	90.0	0.0003	23.13
3.962	0.206	90.0	36.35	28.91	0.0	0.0	0.206	90.0	0.0003	23.13
4.877	0.192	90.0	36.35	28.85	0.0	0.0	0.192	90.0	0.0003	23.15
6.096	0.172	90.0	36.36	28.78	0.0	0.0	0.172	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.144	90.0	36.24	28.56	0.0	0.0	0.144	90.0	0.0003	23.17
9.144	0.127	90.0	36.29	28.5	0.0	0.0	0.127	90.0	0.0003	23.22
10.06	0.115	90.0	36.38	28.13	0.0	0.0	0.115	90.0	0.0003	23.41
10.97	0.102	90.0	36.41	25.88	0.0	0.0	0.102	90.0	0.0003	24.16
13.07	0.0735	90.0	36.47	25.57	0.0	0.0	0.0735	90.0	0.0003	24.3
13.11	0.0721	90.0	36.42	25.33	0.0	0.0	0.0721	90.0	0.0003	24.34
14.02	0.036	90.0	36.43	25.05	0.0	0.0	0.036	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	28.0	1.0

Simulation:

Froude number: 30.3; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.036	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	44.12	0.0581	42.36	18.14	33.47	0.675	7.141	6.478	0.183	1.718;
186	35.5	0.104	194.4	37.75	35.9	0.177	39.14	21.62	4.355	21.55; acute zone;
193	34.47	0.108	216.8	36.89	35.96	0.163	44.83	22.71	5.155	24.61; trap level;
197	34.01	0.11	229.5	35.57	35.99	0.155	47.85	23.18	5.558	26.1; begin overlap;
200	33.72	0.111	238.0	34.38	36.0	0.151	49.84	23.5	5.844	27.14;
263	31.36	0.121	316.1	-0.049	36.09	0.115	66.45	28.03	11.15	45.25; local maximum rise or fall;
300	32.28	0.118	322.1	-20.77	36.11	0.121	72.63	30.62	14.8	57.19;
314	33.64	0.113	339.6	-26.95	36.15	0.125	83.53	32.16	17.31	65.17; end overlap;
319	34.4	0.109	359.5	-25.78	36.17	0.123	92.15	32.87	18.67	69.37; trap level;
320	34.53	0.109	363.5	-25.27	36.17	0.122	93.64	32.98	18.9	70.08; begin overlap;
364	35.95	0.102	409.7	0.176	36.2	0.109	105.4	35.23	23.86	85.32; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.41 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.14E-4	8745.2	1193.3	100.0	2417.5	0.0	0.0	1.00E-5	3.00E-4
7.80E-5	12819.8	1749.3	200.0	5195.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 103; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.003.db; Diffuser table record 7: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.27	90.0	36.35	28.92	0.0	0.0	0.27	90.0	0.0003	23.13
3.048	0.221	90.0	36.35	28.92	0.0	0.0	0.221	90.0	0.0003	23.13
3.962	0.206	90.0	36.35	28.91	0.0	0.0	0.206	90.0	0.0003	23.13
4.877	0.192	90.0	36.35	28.85	0.0	0.0	0.192	90.0	0.0003	23.15
6.096	0.172	90.0	36.36	28.78	0.0	0.0	0.172	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.144	90.0	36.24	28.56	0.0	0.0	0.144	90.0	0.0003	23.17
9.144	0.127	90.0	36.29	28.5	0.0	0.0	0.127	90.0	0.0003	23.22
10.06	0.115	90.0	36.38	28.13	0.0	0.0	0.115	90.0	0.0003	23.41
10.97	0.102	90.0	36.41	25.88	0.0	0.0	0.102	90.0	0.0003	24.16
13.07	0.0735	90.0	36.47	25.57	0.0	0.0	0.0735	90.0	0.0003	24.3
13.11	0.0721	90.0	36.42	25.33	0.0	0.0	0.0721	90.0	0.0003	24.34
14.02	0.036	90.0	36.43	25.05	0.0	0.0	0.036	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.036	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.19	0.0573	42.79	16.05	35.54	0.668	7.21	6.564	0.186	1.744;
179	38.77	0.0902	189.9	21.48	36.26	0.163	34.44	21.75	3.906	20.45; acute zone;
200	36.9	0.098	260.1	20.44	36.31	0.128	50.61	25.72	6.619	31.5;
203	36.67	0.099	270.1	20.06	36.32	0.125	53.21	26.18	7.034	33.11; begin overlap;
214	35.85	0.102	306.9	18.27	36.33	0.116	63.53	27.83	8.738	39.5; trap level;
250	34.73	0.107	362.8	-0.302	36.35	0.105	79.71	31.4	13.6	56.81; local maximum rise or fall;
278	35.59	0.104	384.1	-14.76	36.35	0.106	90.91	34.11	17.96	71.87; end overlap;
282	36.0	0.103	400.9	-14.47	36.36	0.105	98.29	34.85	19.33	76.49; trap level;
285	36.24	0.101	413.3	-13.14	36.36	0.104	103.3	35.3	20.24	79.54; begin overlap;
300	37.1	0.0977	468.1	-6.092	36.37	0.1	127.1	37.38	25.06	95.49; end overlap;
302	37.18	0.0974	475.1	-5.098	36.37	0.0998	130.5	37.67	25.81	97.95; bottom hit;

312 37.35 0.0965 507.1 0.0613 36.38 0.0985 146.6 39.18 30.07 111.9; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.88 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
8.94E-5	11189.1	1359.0	100.0	2359.6	0.0	0.0	1.00E-5	3.00E-4
6.06E-5	16509.5	2005.3	200.0	5137.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 104; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.003.db; Diffuser table record 8: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.27	90.0	36.35	28.92	0.0	0.0	0.27	90.0	0.0003	23.13
3.048	0.221	90.0	36.35	28.92	0.0	0.0	0.221	90.0	0.0003	23.13
3.962	0.206	90.0	36.35	28.91	0.0	0.0	0.206	90.0	0.0003	23.13
4.877	0.192	90.0	36.35	28.85	0.0	0.0	0.192	90.0	0.0003	23.15
6.096	0.172	90.0	36.36	28.78	0.0	0.0	0.172	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.144	90.0	36.24	28.56	0.0	0.0	0.144	90.0	0.0003	23.17
9.144	0.127	90.0	36.29	28.5	0.0	0.0	0.127	90.0	0.0003	23.22
10.06	0.115	90.0	36.38	28.13	0.0	0.0	0.115	90.0	0.0003	23.41
10.97	0.102	90.0	36.41	25.88	0.0	0.0	0.102	90.0	0.0003	24.16
13.07	0.0735	90.0	36.47	25.57	0.0	0.0	0.0735	90.0	0.0003	24.3
13.11	0.0721	90.0	36.42	25.33	0.0	0.0	0.0721	90.0	0.0003	24.34
14.02	0.036	90.0	36.43	25.05	0.0	0.0	0.036	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -30.66; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.036	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	41.36	0.0795	44.16	42.31	39.69	0.638	7.349	4.789	0.233	1.728;
162	36.03	0.102	140.7	21.41	37.52	0.189	21.94	12.21	2.37	10.97; begin overlap;
200	35.29	0.105	180.6	1.129	37.28	0.149	28.19	15.27	4.233	17.82;

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203    35.29    0.105    182.4    -0.534    37.27    0.148    28.54    15.48    4.385    18.36; local maximum rise or
fall;
257    37.25    0.0973    226.8    -28.27    37.0     0.139    41.54    20.23    8.461    32.48; end overlap;
258    37.34    0.0969    228.6    -28.68    36.99    0.139    42.13    20.34    8.587    32.91; acute zone;
292    43.97    0.0642    326.9    -38.8     36.74    0.126    78.36    25.36    16.32    59.09; bottom hit;
300    47.42    0.026     369.2    -38.09    36.69    0.115    91.82    27.21    20.24    73.21; trap level;
315    55.06    -0.0704   518.3    -29.91    36.64    0.0742   118.6    31.82    30.17    115.5; begin overlap;
367    57.31    -0.0998   666.6     0.135    36.62    0.051    131.2    35.24    36.24    153.8; local maximum rise or
fall;
400     56.8    -0.094    674.2     18.96    36.62    0.051    134.0    36.76    38.71    171.7;
460    49.09   -0.00824  679.9     51.76    36.59    0.0579   155.2    41.89     45.9    236.5; end overlap, matched
energy radial vel = 0.0167m/s;
463    45.19    0.025     699.9     51.7     36.59    0.0556   161.9    43.78    48.29    263.2; trap level;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.78 m
  conc dilutn width distnce time
(kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
9.28E-5 10781.6 1636.3 100.0 2225.9 0.0 0.0 1.00E-5 3.00E-4
6.19E-5 16164.5 2453.2 200.0 5003.7 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 105; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.003.db; Diffuser table record 9: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.27	90.0	36.35	28.92	0.0	0.0	0.27	90.0	0.0003	23.13
3.048	0.221	90.0	36.35	28.92	0.0	0.0	0.221	90.0	0.0003	23.13
3.962	0.206	90.0	36.35	28.91	0.0	0.0	0.206	90.0	0.0003	23.13
4.877	0.192	90.0	36.35	28.85	0.0	0.0	0.192	90.0	0.0003	23.15
6.096	0.172	90.0	36.36	28.78	0.0	0.0	0.172	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.144	90.0	36.24	28.56	0.0	0.0	0.144	90.0	0.0003	23.17
9.144	0.127	90.0	36.29	28.5	0.0	0.0	0.127	90.0	0.0003	23.22
10.06	0.115	90.0	36.38	28.13	0.0	0.0	0.115	90.0	0.0003	23.41
10.97	0.102	90.0	36.41	25.88	0.0	0.0	0.102	90.0	0.0003	24.16
13.07	0.0735	90.0	36.47	25.57	0.0	0.0	0.0735	90.0	0.0003	24.3
13.11	0.0721	90.0	36.42	25.33	0.0	0.0	0.0721	90.0	0.0003	24.34
14.02	0.036	90.0	36.43	25.05	0.0	0.0	0.036	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia P-elev V-angle H-angle Ports AcuteMZ ChrnMZ P-depth Ttl-flo Eff-sal Temp Polutnt

(in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 3.0 5.0 28.0 1.0

Simulation:

Froude number: 37.74; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.036	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.1	0.0584	42.36	17.13	32.09	1.006	7.096	6.716	0.129	1.199;
172	37.14	0.0967	162.0	32.67	35.4	0.287	29.46	21.94	2.424	12.75; acute zone;
191	33.47	0.112	222.8	36.06	35.71	0.221	42.9	26.74	4.381	20.49; trap level;
200	32.04	0.118	258.8	33.1	35.81	0.192	50.2	28.53	5.424	24.26;
203	31.68	0.12	269.7	31.95	35.83	0.185	52.42	29.0	5.735	25.34; begin overlap;
267	28.23	0.134	408.4	-0.0912	36.01	0.131	84.34	37.22	13.97	51.09; local maximum rise or fall;
300	29.64	0.129	451.7	-17.3	36.06	0.133	104.4	41.82	20.65	70.29;
307	30.49	0.126	472.6	-20.15	36.08	0.134	115.0	43.02	22.8	76.24; end overlap;
320	32.96	0.116	542.2	-20.34	36.14	0.13	148.0	45.71	28.64	92.13; trap level;
324	33.67	0.112	567.8	-18.11	36.15	0.127	158.9	46.45	30.54	97.25; begin overlap, matched
energy radial vel = 0.0447m/s;										
345	34.49	0.108	596.1	-5.58	36.16	0.121	165.6	47.74	34.05	106.7; bottom hit;
355	34.55	0.108	599.4	0.179	36.16	0.12	166.3	48.17	35.23	109.9; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.22 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
8.48E-5	11785.8	1490.9	100.0	2272.5	0.0	0.0	1.00E-5	3.00E-4
5.69E-5	17569.2	2222.5	200.0	5050.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 106; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.003.db; Diffuser table record 10: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.27	90.0	36.35	28.92	0.0	0.0	0.27	90.0	0.0003	23.13
3.048	0.221	90.0	36.35	28.92	0.0	0.0	0.221	90.0	0.0003	23.13
3.962	0.206	90.0	36.35	28.91	0.0	0.0	0.206	90.0	0.0003	23.13
4.877	0.192	90.0	36.35	28.85	0.0	0.0	0.192	90.0	0.0003	23.15
6.096	0.172	90.0	36.36	28.78	0.0	0.0	0.172	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.144	90.0	36.24	28.56	0.0	0.0	0.144	90.0	0.0003	23.17

9.144	0.127	90.0	36.29	28.5	0.0	0.0	0.127	90.0	0.0003	23.22
10.06	0.115	90.0	36.38	28.13	0.0	0.0	0.115	90.0	0.0003	23.41
10.97	0.102	90.0	36.41	25.88	0.0	0.0	0.102	90.0	0.0003	24.16
13.07	0.0735	90.0	36.47	25.57	0.0	0.0	0.0735	90.0	0.0003	24.3
13.11	0.0721	90.0	36.42	25.33	0.0	0.0	0.0721	90.0	0.0003	24.34
14.02	0.036	90.0	36.43	25.05	0.0	0.0	0.036	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 45.45; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.036	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.12	0.0582	42.56	16.49	33.47	1.003	7.141	6.761	0.13	1.208;
170	38.13	0.0927	160.9	27.22	35.7	0.281	28.52	21.91	2.332	12.47; acute zone;
193	34.25	0.109	239.1	30.77	35.96	0.201	44.96	28.16	4.847	22.59; trap level;
200	33.29	0.113	267.4	28.32	36.01	0.181	50.6	29.62	5.699	25.72;
201	33.19	0.113	270.9	27.89	36.01	0.179	51.26	29.78	5.8	26.09; begin overlap;
254	31.04	0.123	362.5	-0.423	36.1	0.136	69.09	36.17	10.97	43.58; local maximum rise or fall;
300	33.4	0.114	408.2	-24.4	36.16	0.138	88.76	42.16	17.43	64.03;
302	33.72	0.112	416.5	-24.7	36.16	0.137	91.92	42.58	17.99	65.76; end overlap;
305	34.25	0.11	432.7	-24.09	36.18	0.134	97.52	43.27	18.94	68.66; trap level;
307	34.53	0.109	443.0	-23.14	36.18	0.132	100.6	43.63	19.47	70.26; begin overlap;
308	34.64	0.108	447.2	-22.6	36.19	0.131	101.8	43.78	19.69	70.95; matched energy radial
vel = 0.0353m/s;										
347	35.87	0.103	491.4	0.0632	36.2	0.119	110.4	46.64	24.24	84.67; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.48 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.18E-4	8467.6	1323.2	100.0	2332.7	0.0	0.0	1.00E-5	3.00E-4
7.98E-5	12532.9	1958.5	200.0	5110.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 107; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.003.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.27	90.0	36.35	28.92	0.0	0.0	0.27	90.0	0.0003	23.13
3.048	0.221	90.0	36.35	28.92	0.0	0.0	0.221	90.0	0.0003	23.13
3.962	0.206	90.0	36.35	28.91	0.0	0.0	0.206	90.0	0.0003	23.13
4.877	0.192	90.0	36.35	28.85	0.0	0.0	0.192	90.0	0.0003	23.15
6.096	0.172	90.0	36.36	28.78	0.0	0.0	0.172	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.144	90.0	36.24	28.56	0.0	0.0	0.144	90.0	0.0003	23.17
9.144	0.127	90.0	36.29	28.5	0.0	0.0	0.127	90.0	0.0003	23.22
10.06	0.115	90.0	36.38	28.13	0.0	0.0	0.115	90.0	0.0003	23.41
10.97	0.102	90.0	36.41	25.88	0.0	0.0	0.102	90.0	0.0003	24.16
13.07	0.0735	90.0	36.47	25.57	0.0	0.0	0.0735	90.0	0.0003	24.3
13.11	0.0721	90.0	36.42	25.33	0.0	0.0	0.0721	90.0	0.0003	24.34
14.02	0.036	90.0	36.43	25.05	0.0	0.0	0.036	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 78.38; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.036	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.15	0.0578	42.87	15.49	35.54	0.998	7.21	6.828	0.131	1.221;
168	39.48	0.0872	160.9	18.34	36.21	0.273	27.7	22.05	2.258	12.32; acute zone;
200	35.89	0.102	285.3	18.43	36.31	0.164	52.05	31.74	6.33	28.96;
202	35.68	0.103	294.3	18.19	36.31	0.16	54.0	32.28	6.667	30.23; trap level;
208	35.17	0.105	319.8	16.44	36.32	0.149	59.44	33.65	7.593	33.65; begin overlap;
240	34.25	0.109	379.7	-0.455	36.34	0.13	72.24	38.19	11.37	47.07; local maximum rise or fall;
270	35.35	0.105	419.5	-15.45	36.35	0.126	85.82	42.62	15.8	62.23; end overlap;
274	35.76	0.104	439.4	-15.32	36.35	0.123	92.11	43.6	16.95	66.08; trap level;
276	35.96	0.103	450.0	-14.66	36.35	0.121	95.26	44.05	17.52	67.96; begin overlap;
280	36.26	0.101	466.2	-12.81	36.35	0.119	99.83	44.8	18.5	71.21; matched energy radial
vel = 0.0318m/s;										
281	36.32	0.101	469.7	-12.33	36.35	0.118	100.8	44.98	18.75	72.01; matched energy radial
vel = 0.0318m/s;										
282	36.39	0.101	473.2	-11.84	36.36	0.117	101.8	45.17	19.0	72.83; matched energy radial
vel = 0.0318m/s;										

295 36.99 0.0981 514.0 -5.209 36.36 0.112 114.2 47.53 22.45 84.12; bottom hit;
 300 37.1 0.0976 527.4 -2.563 36.36 0.11 118.6 48.44 23.89 88.81;
 305 37.13 0.0974 539.7 0.108 36.37 0.109 123.0 49.36 25.39 93.71; local maximum rise or
 fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.71 m

conc	dilutn	width	distnce	time						
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
1.09E-4	9094.6	1401.0	100.0	2307.8	0.0	0.0	1.00E-5	3.00E-4		
7.41E-5	13500.3	2079.8	200.0	5085.6	0.0	0.0	1.00E-5	3.00E-4		

count: 2

/ UM3.

Case 108; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.003.db; Diffuser table record 12: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.27	90.0	36.35	28.92	0.0	0.0	0.27	90.0	0.0003	23.13
3.048	0.221	90.0	36.35	28.92	0.0	0.0	0.221	90.0	0.0003	23.13
3.962	0.206	90.0	36.35	28.91	0.0	0.0	0.206	90.0	0.0003	23.13
4.877	0.192	90.0	36.35	28.85	0.0	0.0	0.192	90.0	0.0003	23.15
6.096	0.172	90.0	36.36	28.78	0.0	0.0	0.172	90.0	0.0003	23.18
7.468	0.15	90.0	36.38	28.63	0.0	0.0	0.15	90.0	0.0003	23.25
7.925	0.144	90.0	36.24	28.56	0.0	0.0	0.144	90.0	0.0003	23.17
9.144	0.127	90.0	36.29	28.5	0.0	0.0	0.127	90.0	0.0003	23.22
10.06	0.115	90.0	36.38	28.13	0.0	0.0	0.115	90.0	0.0003	23.41
10.97	0.102	90.0	36.41	25.88	0.0	0.0	0.102	90.0	0.0003	24.16
13.07	0.0735	90.0	36.47	25.57	0.0	0.0	0.0735	90.0	0.0003	24.3
13.11	0.0721	90.0	36.42	25.33	0.0	0.0	0.0721	90.0	0.0003	24.34
14.02	0.036	90.0	36.43	25.05	0.0	0.0	0.036	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -45.99; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.036	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	41.09	0.0805	43.73	43.77	39.69	0.977	7.349	4.979	0.165	1.208;

```

170  32.75  0.115  168.3  25.89  37.33  0.239  26.4  15.27  2.602  10.97; begin overlap;
200  31.69  0.12  208.8  9.593  37.16  0.189  31.97  18.16  4.1  16.0;
218  31.56  0.121  222.3  -0.491  37.11  0.179  34.14  19.68  5.014  18.96; local maximum rise or
fall;
236  31.74  0.12  231.1  -10.58  37.06  0.176  36.15  21.18  5.988  22.07; acute zone;
276  33.9  0.111  255.4  -31.9  36.92  0.179  45.16  25.22  9.043  31.56; end overlap;
290  36.38  0.101  303.0  -33.4  36.81  0.162  58.06  27.82  11.67  39.47; trap level;
300  38.1  0.0941  351.2  -29.49  36.74  0.144  69.35  29.59  13.88  46.12;
312  39.9  0.0865  410.2  -24.03  36.69  0.128  83.75  31.59  16.86  55.2; begin overlap;
316  40.41  0.0843  429.0  -22.05  36.68  0.124  88.43  32.23  17.91  58.47; bottom hit;
356  42.86  0.0736  540.0  0.105  36.63  0.104  116.6  37.9  28.89  93.51; local maximum rise or
fall;
384  41.31  0.0795  580.4  15.6  36.6  0.103  133.8  41.96  37.88  123.1; end overlap;
386  41.0  0.0806  587.6  16.6  36.6  0.103  137.0  42.37  38.85  126.4; matched energy radial
vel = 0.0307m/s;
400  37.52  0.0948  678.0  18.28  36.56  0.0999  177.5  45.9  48.48  158.9; trap level;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.22 m
  conc dilutn  width distnce  time
(kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
8.40E-5 11914.8  1597.1  100.0  2212.5  0.0  0.0 1.00E-5 3.00E-4
5.59E-5 17893.4  2398.4  200.0  4990.3  0.0  0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 109; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.004.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.45	90.0	36.35	28.92	0.0	0.0	0.45	90.0	0.0003	23.13
3.048	0.368	90.0	36.35	28.92	0.0	0.0	0.368	90.0	0.0003	23.13
3.962	0.344	90.0	36.35	28.91	0.0	0.0	0.344	90.0	0.0003	23.13
4.877	0.319	90.0	36.35	28.85	0.0	0.0	0.319	90.0	0.0003	23.15
6.096	0.287	90.0	36.36	28.78	0.0	0.0	0.287	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.24	90.0	36.24	28.56	0.0	0.0	0.24	90.0	0.0003	23.17
9.144	0.212	90.0	36.29	28.5	0.0	0.0	0.212	90.0	0.0003	23.22
10.06	0.191	90.0	36.38	28.13	0.0	0.0	0.191	90.0	0.0003	23.41
10.97	0.17	90.0	36.41	25.88	0.0	0.0	0.17	90.0	0.0003	24.16
13.07	0.123	90.0	36.47	25.57	0.0	0.0	0.123	90.0	0.0003	24.3
13.11	0.12	90.0	36.42	25.33	0.0	0.0	0.12	90.0	0.0003	24.34
14.02	0.06	90.0	36.43	25.05	0.0	0.0	0.0601	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	28.0	1.0

Simulation:

Froude number: 12.58; effleunt density (sigma-T) 0.034; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	44.18	0.0957	40.53	27.12	32.09	0.368	7.096	5.026	0.432	2.515;
200	37.71	0.158	163.7	33.45	35.84	0.164	50.89	11.11	5.997	18.62;
231	34.88	0.177	223.4	23.72	36.1	0.163	94.01	12.28	11.05	29.69; trap level;
243	33.97	0.184	248.1	17.02	36.15	0.162	115.1	12.62	13.48	34.61; begin overlap;
264	33.16	0.19	275.5	5.117	36.2	0.161	141.2	13.09	17.71	42.83; acute zone;
273	33.09	0.19	281.1	-0.00809	36.21	0.161	147.4	13.28	19.63	46.48; local maximum rise or fall;
281	33.17	0.19	284.5	-4.523	36.21	0.163	152.2	13.45	21.46	49.94; end overlap;
300	34.73	0.18	309.7	-12.46	36.25	0.171	189.4	14.13	29.79	65.4;
301	34.88	0.179	312.7	-12.11	36.25	0.171	193.2	14.18	30.48	66.67; trap level;
322	35.86	0.171	344.5	0.305	36.27	0.168	231.0	14.72	39.06	82.27; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.75 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)
4.92E-5	20330.7	1064.6	100.0	2424.4	0.0	0.0	1.00E-5	3.00E-4
3.36E-5	29780.7	1559.4	200.0	5202.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 110; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.004.db; Diffuser table record 2: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.45	90.0	36.35	28.92	0.0	0.0	0.45	90.0	0.0003	23.13
3.048	0.368	90.0	36.35	28.92	0.0	0.0	0.368	90.0	0.0003	23.13
3.962	0.344	90.0	36.35	28.91	0.0	0.0	0.344	90.0	0.0003	23.13
4.877	0.319	90.0	36.35	28.85	0.0	0.0	0.319	90.0	0.0003	23.15
6.096	0.287	90.0	36.36	28.78	0.0	0.0	0.287	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.24	90.0	36.24	28.56	0.0	0.0	0.24	90.0	0.0003	23.17

9.144	0.212	90.0	36.29	28.5	0.0	0.0	0.212	90.0	0.0003	23.22
10.06	0.191	90.0	36.38	28.13	0.0	0.0	0.191	90.0	0.0003	23.41
10.97	0.17	90.0	36.41	25.88	0.0	0.0	0.17	90.0	0.0003	24.16
13.07	0.123	90.0	36.47	25.57	0.0	0.0	0.123	90.0	0.0003	24.3
13.11	0.12	90.0	36.42	25.33	0.0	0.0	0.12	90.0	0.0003	24.34
14.02	0.06	90.0	36.43	25.05	0.0	0.0	0.0601	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	28.0	1.0

Simulation:

Froude number: 15.15; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	44.28	0.0936	41.23	23.72	33.47	0.357	7.141	5.116	0.441	2.573;
200	38.84	0.15	168.2	28.01	36.01	0.15	49.2	11.6	6.132	19.54;
240	35.42	0.174	246.9	18.16	36.24	0.154	108.6	13.38	14.15	37.5; trap level;
251	34.57	0.18	270.8	12.07	36.26	0.155	131.4	13.78	17.28	43.95; acute zone;
273	34.04	0.184	295.5	-0.458	36.29	0.157	158.0	14.33	22.72	54.73; local maximum rise or fall;
296	35.49	0.175	323.4	-10.71	36.31	0.164	198.3	15.16	32.87	74.26; trap level;
300	35.99	0.171	335.5	-8.329	36.32	0.164	213.4	15.36	35.86	79.9;
315	36.43	0.167	355.3	0.303	36.33	0.163	237.4	15.79	42.82	92.98; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.02 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)
4.87E-5	20547.7	1079.1	100.0	2391.3	0.0	0.0	1.00E-5	3.00E-4
3.31E-5	30209.4	1586.5	200.0	5169.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 111; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.004.db; Diffuser table record 3: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.45	90.0	36.35	28.92	0.0	0.0	0.45	90.0	0.0003	23.13
3.048	0.368	90.0	36.35	28.92	0.0	0.0	0.368	90.0	0.0003	23.13

3.962	0.344	90.0	36.35	28.91	0.0	0.0	0.344	90.0	0.0003	23.13
4.877	0.319	90.0	36.35	28.85	0.0	0.0	0.319	90.0	0.0003	23.15
6.096	0.287	90.0	36.36	28.78	0.0	0.0	0.287	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.24	90.0	36.24	28.56	0.0	0.0	0.24	90.0	0.0003	23.17
9.144	0.212	90.0	36.29	28.5	0.0	0.0	0.212	90.0	0.0003	23.22
10.06	0.191	90.0	36.38	28.13	0.0	0.0	0.191	90.0	0.0003	23.41
10.97	0.17	90.0	36.41	25.88	0.0	0.0	0.17	90.0	0.0003	24.16
13.07	0.123	90.0	36.47	25.57	0.0	0.0	0.123	90.0	0.0003	24.3
13.11	0.12	90.0	36.42	25.33	0.0	0.0	0.12	90.0	0.0003	24.34
14.02	0.06	90.0	36.43	25.05	0.0	0.0	0.0601	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 26.13; effluent density (sigma-T) 18.67; effluent velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.47	0.0901	42.21	17.93	35.54	0.344	7.21	5.252	0.454	2.659;
155	42.61	0.124	105.3	20.71	36.12	0.158	20.39	9.865	2.505	10.33; begin overlap;
191	41.4	0.133	157.0	16.91	36.28	0.132	37.66	12.06	5.269	18.47; end overlap;
200	41.02	0.135	173.0	15.39	36.3	0.13	44.94	12.63	6.429	21.62;
238	38.99	0.149	249.4	8.972	36.38	0.133	95.38	15.25	15.96	45.26; acute zone;
242	38.73	0.151	258.5	8.247	36.38	0.134	103.2	15.55	17.64	49.21; trap level;
275	36.98	0.163	345.1	-0.0899	36.4	0.144	198.5	18.63	45.76	111.0; local maximum rise or fall;
292	38.32	0.155	401.6	-3.031	36.41	0.149	277.9	20.76	77.89	177.6; trap level;
293	38.43	0.154	405.4	-2.918	36.41	0.149	283.4	20.88	80.1	182.1; bottom hit;
300	39.07	0.149	434.1	-0.852	36.41	0.149	325.6	21.87	99.79	222.4;
302	39.07	0.149	442.4	0.284	36.41	0.149	338.0	22.24	107.9	239.1; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.24 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)
4.19E-5	23876.8	1097.0	100.0	1844.7	0.0	0.0	1.00E-5	3.00E-4
2.65E-5	37795.3	1736.5	200.0	4622.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 112; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.004.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.45	90.0	36.35	28.92	0.0	0.0	0.45	90.0	0.0003	23.13
3.048	0.368	90.0	36.35	28.92	0.0	0.0	0.368	90.0	0.0003	23.13
3.962	0.344	90.0	36.35	28.91	0.0	0.0	0.344	90.0	0.0003	23.13
4.877	0.319	90.0	36.35	28.85	0.0	0.0	0.319	90.0	0.0003	23.15
6.096	0.287	90.0	36.36	28.78	0.0	0.0	0.287	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.24	90.0	36.24	28.56	0.0	0.0	0.24	90.0	0.0003	23.17
9.144	0.212	90.0	36.29	28.5	0.0	0.0	0.212	90.0	0.0003	23.22
10.06	0.191	90.0	36.38	28.13	0.0	0.0	0.191	90.0	0.0003	23.41
10.97	0.17	90.0	36.41	25.88	0.0	0.0	0.17	90.0	0.0003	24.16
13.07	0.123	90.0	36.47	25.57	0.0	0.0	0.123	90.0	0.0003	24.3
13.11	0.12	90.0	36.42	25.33	0.0	0.0	0.12	90.0	0.0003	24.34
14.02	0.06	90.0	36.43	25.05	0.0	0.0	0.0601	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	28.0	1.0

Simulation:

Froude number: -15.33; effleunt density (sigma-T) 41.53; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.06	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	42.56	0.124	45.15	35.22	39.68	0.305	7.349	3.783	0.539	2.584;
124	41.78	0.13	66.31	25.72	38.67	0.209	10.75	4.964	1.11	4.466; begin overlap;
179	41.12	0.135	102.8	-0.039	37.77	0.147	18.06	7.175	3.1	10.13; local maximum rise or fall;
200	41.27	0.134	114.4	-10.37	37.55	0.143	21.66	8.093	4.306	13.35;
214	41.58	0.132	125.4	-16.43	37.38	0.142	25.85	8.76	5.383	16.14; end overlap;
259	45.41	0.0754	197.4	-28.81	36.84	0.135	61.27	11.47	13.27	36.18; bottom hit;
270	48.42	0.0188	226.6	-33.48	36.76	0.127	75.75	12.57	18.1	49.75; acute zone;
288	53.9	-0.0948	297.3	-44.1	36.68	0.0963	100.4	14.11	24.91	73.14; begin overlap;
300	55.55	-0.129	347.2	-50.69	36.66	0.0795	112.4	14.53	26.36	81.0;
312	56.88	-0.156	388.6	-57.05	36.64	0.0686	121.1	14.86	27.27	87.85; trap level;
400	62.7	-0.273	572.9	-61.91	36.61	0.0398	151.5	16.43	28.17	125.8;
500	65.37	-0.327	561.1	-7.901	36.6	0.0468	169.2	17.8	24.17	164.8;

515 65.45 -0.329 532.4 0.286 36.6 0.0537 173.9 18.09 22.74 173.7; local maximum rise or fall;
 532 65.08 -0.323 450.1 7.091 36.58 0.0903 200.5 18.62 18.84 191.1; end overlap;
 568 60.82 -0.24 434.1 5.306 36.53 0.189 409.0 20.03 -17.68 263.1; trap level;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.03 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (ppm) (s-1) (m/s)(m0.67/s2)
 2.92E-5 34196.2 1274.0 100.0 2551.6 0.0 0.0 1.00E-5 3.00E-4
 2.02E-5 49419.8 1841.2 200.0 5329.4 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 113; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.004.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.45	90.0	36.35	28.92	0.0	0.0	0.45	90.0	0.0003	23.13
3.048	0.368	90.0	36.35	28.92	0.0	0.0	0.368	90.0	0.0003	23.13
3.962	0.344	90.0	36.35	28.91	0.0	0.0	0.344	90.0	0.0003	23.13
4.877	0.319	90.0	36.35	28.85	0.0	0.0	0.319	90.0	0.0003	23.15
6.096	0.287	90.0	36.36	28.78	0.0	0.0	0.287	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.24	90.0	36.24	28.56	0.0	0.0	0.24	90.0	0.0003	23.17
9.144	0.212	90.0	36.29	28.5	0.0	0.0	0.212	90.0	0.0003	23.22
10.06	0.191	90.0	36.38	28.13	0.0	0.0	0.191	90.0	0.0003	23.41
10.97	0.17	90.0	36.41	25.88	0.0	0.0	0.17	90.0	0.0003	24.16
13.07	0.123	90.0	36.47	25.57	0.0	0.0	0.123	90.0	0.0003	24.3
13.11	0.12	90.0	36.42	25.33	0.0	0.0	0.12	90.0	0.0003	24.34
14.02	0.06	90.0	36.43	25.05	0.0	0.0	0.0601	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 25.16; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.06	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	44.21	0.095	42.04	19.06	32.09	0.681	7.096	5.997	0.275	1.566;

```

200    36.5    0.166    211.9    32.74    35.82    0.191    49.75    18.09    6.283    18.61;
211    35.41    0.174    241.2    30.44    35.93    0.183    61.64    19.0    7.807    22.02; begin overlap;
220    34.55    0.18    265.4    27.14    36.0    0.177    72.43    19.67    9.229    25.06; trap level;
223    34.28    0.182    273.1    25.82    36.02    0.176    75.97    19.87    9.729    26.11; acute zone;
271    32.18    0.197    345.8    -0.0959    36.14    0.166    114.7    22.6    18.83    43.94; local maximum rise or
fall;
283    32.4    0.195    356.9    -6.73    36.16    0.169    124.3    23.33    21.99    49.87; end overlap;
300    34.05    0.185    392.8    -13.95    36.2    0.177    158.1    24.83    29.75    64.0;
302    34.37    0.183    400.4    -13.37    36.21    0.177    164.5    25.04    31.04    66.31; trap level;
309    35.11    0.177    424.7    -9.176    36.23    0.175    183.1    25.59    34.7    72.83; matched energy radial
vel = 0.0442m/s;
312    35.26    0.176    431.4    -7.419    36.23    0.175    188.1    25.74    35.75    74.7; begin overlap;
325    35.5    0.174    446.0    0.0766    36.24    0.173    199.1    26.29    39.79    81.87; local maximum rise or
fall;

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Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.33 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)	
6.28E-5	15914.8	1251.2	100.0	2374.0	0.0	0.0	1.00E-5	3.00E-4	
4.26E-5	23443.7	1843.2	200.0	5151.8	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 114; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.004.db; Diffuser table record 6: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.45	90.0	36.35	28.92	0.0	0.0	0.45	90.0	0.0003	23.13
3.048	0.368	90.0	36.35	28.92	0.0	0.0	0.368	90.0	0.0003	23.13
3.962	0.344	90.0	36.35	28.91	0.0	0.0	0.344	90.0	0.0003	23.13
4.877	0.319	90.0	36.35	28.85	0.0	0.0	0.319	90.0	0.0003	23.15
6.096	0.287	90.0	36.36	28.78	0.0	0.0	0.287	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.24	90.0	36.24	28.56	0.0	0.0	0.24	90.0	0.0003	23.17
9.144	0.212	90.0	36.29	28.5	0.0	0.0	0.212	90.0	0.0003	23.22
10.06	0.191	90.0	36.38	28.13	0.0	0.0	0.191	90.0	0.0003	23.41
10.97	0.17	90.0	36.41	25.88	0.0	0.0	0.17	90.0	0.0003	24.16
13.07	0.123	90.0	36.47	25.57	0.0	0.0	0.123	90.0	0.0003	24.3
13.11	0.12	90.0	36.42	25.33	0.0	0.0	0.12	90.0	0.0003	24.34
14.02	0.06	90.0	36.43	25.05	0.0	0.0	0.0601	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia P-elev V-angle H-angle Ports AcuteMZ ChrncMZ P-depth Ttl-flo Eff-sal Temp Polutnt
 (in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 2.0 15.0 28.0 1.0

Simulation:

Froude number: 30.3; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	44.25	0.0943	42.32	17.83	33.47	0.676	7.141	6.049	0.277	1.581;
193	38.15	0.155	200.1	27.93	35.95	0.185	43.0	17.96	5.578	17.27; begin overlap;
200	37.6	0.159	217.2	27.19	36.01	0.178	48.79	18.61	6.408	19.27;
214	36.42	0.167	254.5	24.82	36.1	0.169	63.6	19.88	8.477	24.04; end overlap;
217	36.15	0.169	263.2	24.17	36.12	0.168	67.49	20.15	9.009	25.23; acute zone;
227	35.23	0.175	293.0	21.23	36.17	0.165	82.2	21.02	11.03	29.59; trap level;
228	35.14	0.176	295.9	20.82	36.18	0.165	83.73	21.1	11.24	30.04; begin overlap;
267	33.5	0.188	360.3	-0.117	36.24	0.16	120.4	23.48	19.55	46.75; local maximum rise or
fall;										
283	33.88	0.185	372.0	-8.931	36.25	0.164	131.0	24.41	23.56	54.52; end overlap;
295	35.24	0.176	405.2	-11.79	36.28	0.169	160.1	25.68	30.08	66.88; trap level;
300	35.78	0.172	423.8	-8.823	36.29	0.168	174.3	26.18	33.04	72.42;
306	36.06	0.17	437.3	-5.29	36.3	0.167	184.3	26.53	35.32	76.65; begin overlap;
316	36.19	0.169	450.6	0.361	36.3	0.166	194.8	27.05	38.9	83.3; local maximum rise or

fall, end overlap;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.44 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)
6.44E-5	15522.3	1260.5	100.0	2376.6	0.0	0.0	1.00E-5	3.00E-4
4.37E-5	22858.8	1856.3	200.0	5154.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 115; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.004.db; Diffuser table record 7: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.45	90.0	36.35	28.92	0.0	0.0	0.45	90.0	0.0003	23.13
3.048	0.368	90.0	36.35	28.92	0.0	0.0	0.368	90.0	0.0003	23.13
3.962	0.344	90.0	36.35	28.91	0.0	0.0	0.344	90.0	0.0003	23.13
4.877	0.319	90.0	36.35	28.85	0.0	0.0	0.319	90.0	0.0003	23.15
6.096	0.287	90.0	36.36	28.78	0.0	0.0	0.287	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25

7.925	0.24	90.0	36.24	28.56	0.0	0.0	0.24	90.0	0.0003	23.17
9.144	0.212	90.0	36.29	28.5	0.0	0.0	0.212	90.0	0.0003	23.22
10.06	0.191	90.0	36.38	28.13	0.0	0.0	0.191	90.0	0.0003	23.41
10.97	0.17	90.0	36.41	25.88	0.0	0.0	0.17	90.0	0.0003	24.16
13.07	0.123	90.0	36.47	25.57	0.0	0.0	0.123	90.0	0.0003	24.3
13.11	0.12	90.0	36.42	25.33	0.0	0.0	0.12	90.0	0.0003	24.34
14.02	0.06	90.0	36.43	25.05	0.0	0.0	0.0601	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.31	0.0931	42.74	15.92	35.54	0.67	7.21	6.126	0.281	1.604;
189	40.09	0.142	199.0	16.66	36.28	0.172	39.63	18.41	5.384	17.29; begin overlap;
200	39.57	0.145	225.9	15.51	36.31	0.161	47.67	19.61	6.743	20.78;
209	39.13	0.148	249.4	14.31	36.33	0.154	55.76	20.59	8.105	24.15; acute zone;
212	38.97	0.149	257.7	13.86	36.34	0.153	58.86	20.92	8.62	25.41; end overlap;
236	37.57	0.159	332.3	9.53	36.37	0.147	93.87	23.81	14.9	39.91; trap level;
270	35.68	0.172	451.9	-0.191	36.39	0.153	180.6	28.82	36.47	85.19; local maximum rise or fall;
279	36.16	0.17	481.2	-3.979	36.39	0.156	208.1	30.27	45.86	104.0; bottom hit;
284	36.63	0.167	503.8	-3.748	36.4	0.157	229.8	31.22	52.86	117.8; trap level;
299	37.66	0.159	582.6	0.402	36.4	0.158	309.2	34.8	86.14	182.6; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.80 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)
4.83E-5	20707.3	1369.4	100.0	1991.1	0.0	0.0	1.00E-5	3.00E-4
3.12E-5	32045.4	2119.3	200.0	4768.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 116; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.004.db; Diffuser table record 8: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
-------	---------	---------	---------	---------	---------	-------	---------	---------	---------	---------

m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.45	90.0	36.35	28.92	0.0	0.0	0.45	90.0	0.0003	23.13
3.048	0.368	90.0	36.35	28.92	0.0	0.0	0.368	90.0	0.0003	23.13
3.962	0.344	90.0	36.35	28.91	0.0	0.0	0.344	90.0	0.0003	23.13
4.877	0.319	90.0	36.35	28.85	0.0	0.0	0.319	90.0	0.0003	23.15
6.096	0.287	90.0	36.36	28.78	0.0	0.0	0.287	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.24	90.0	36.24	28.56	0.0	0.0	0.24	90.0	0.0003	23.17
9.144	0.212	90.0	36.29	28.5	0.0	0.0	0.212	90.0	0.0003	23.22
10.06	0.191	90.0	36.38	28.13	0.0	0.0	0.191	90.0	0.0003	23.41
10.97	0.17	90.0	36.41	25.88	0.0	0.0	0.17	90.0	0.0003	24.16
13.07	0.123	90.0	36.47	25.57	0.0	0.0	0.123	90.0	0.0003	24.3
13.11	0.12	90.0	36.42	25.33	0.0	0.0	0.12	90.0	0.0003	24.34
14.02	0.06	90.0	36.43	25.05	0.0	0.0	0.0601	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnCMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -30.66; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	41.75	0.13	43.94	42.28	39.69	0.645	7.349	4.375	0.339	1.543;
154	37.85	0.157	119.2	27.63	37.64	0.24	19.97	9.204	2.345	7.055; begin overlap;
200	36.4	0.167	182.8	8.189	37.14	0.175	33.96	12.36	5.643	14.56;
218	36.24	0.169	206.0	-0.0378	37.01	0.168	41.23	13.72	7.767	19.08; local maximum rise or fall;
226	36.29	0.168	217.4	-3.631	36.95	0.166	45.48	14.37	8.975	21.59; end overlap;
250	37.33	0.162	265.4	-13.49	36.78	0.166	67.67	16.72	14.74	33.22; acute zone;
278	41.07	0.136	352.9	-18.59	36.63	0.163	117.8	19.65	26.6	56.75; bottom hit;
291	43.82	0.109	410.5	-17.82	36.59	0.155	152.4	21.03	34.71	73.34; trap level;
300	46.16	0.0611	464.8	-13.44	36.57	0.143	180.0	22.24	43.0	91.22;
324	47.99	0.0201	549.8	0.437	36.54	0.122	214.4	24.36	58.72	128.5; local maximum rise or fall;
356	43.27	0.108	653.1	15.77	36.52	0.112	276.2	27.46	82.92	194.4; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.59 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)
5.55E-5	18011.2	1495.2	100.0	2038.3	0.0	0.0	1.00E-5	3.00E-4
3.61E-5	27684.7	2298.2	200.0	4816.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 117; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.004.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.45	90.0	36.35	28.92	0.0	0.0	0.45	90.0	0.0003	23.13
3.048	0.368	90.0	36.35	28.92	0.0	0.0	0.368	90.0	0.0003	23.13
3.962	0.344	90.0	36.35	28.91	0.0	0.0	0.344	90.0	0.0003	23.13
4.877	0.319	90.0	36.35	28.85	0.0	0.0	0.319	90.0	0.0003	23.15
6.096	0.287	90.0	36.36	28.78	0.0	0.0	0.287	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.24	90.0	36.24	28.56	0.0	0.0	0.24	90.0	0.0003	23.17
9.144	0.212	90.0	36.29	28.5	0.0	0.0	0.212	90.0	0.0003	23.22
10.06	0.191	90.0	36.38	28.13	0.0	0.0	0.191	90.0	0.0003	23.41
10.97	0.17	90.0	36.41	25.88	0.0	0.0	0.17	90.0	0.0003	24.16
13.07	0.123	90.0	36.47	25.57	0.0	0.0	0.123	90.0	0.0003	24.3
13.11	0.12	90.0	36.42	25.33	0.0	0.0	0.12	90.0	0.0003	24.34
14.02	0.06	90.0	36.43	25.05	0.0	0.0	0.0601	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

Froude number: 37.74; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.06	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.2	0.0954	42.34	16.98	32.09	1.007	7.096	6.391	0.2	1.129;
187	37.15	0.161	202.6	30.24	35.66	0.247	39.4	21.49	4.771	14.45; acute zone;
200	35.72	0.171	241.2	30.38	35.82	0.221	49.96	23.34	6.355	18.17;
205	35.19	0.175	256.7	29.8	35.87	0.213	54.58	23.96	7.01	19.64; begin overlap;
213	34.39	0.181	281.4	27.9	35.93	0.203	62.23	24.89	8.134	22.09; trap level;
271	31.41	0.202	400.6	-0.402	36.12	0.176	108.7	30.49	19.18	43.75; local maximum rise or fall;
282	31.63	0.201	418.6	-6.162	36.14	0.178	120.1	31.67	22.49	49.83; end overlap;
300	33.53	0.189	475.6	-13.59	36.19	0.185	161.2	34.31	31.85	66.4;
303	34.03	0.185	489.8	-12.96	36.21	0.185	171.1	34.79	33.93	70.02; trap level;

```

309      34.72      0.18      516.5      -9.353      36.22      0.182      187.9      35.52      37.34      75.93; matched energy radial
vel = 0.0565m/s;
310      34.78      0.179      519.5      -8.769      36.22      0.182      189.7      35.6      37.73      76.61; begin overlap;
324      35.16      0.176      539.8      -0.66       36.23      0.18       201.7      36.5      42.37      84.63; bottom hit;
326      35.16      0.176      541.0      0.485       36.23      0.18       202.6      36.62     42.98      85.68; local maximum rise or
fall;

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Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.74 m

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      conc dilutn width distance time
(kg/kg) (m) (m) (hrs) (ppm) (s-1) (m/s)(m0.67/s2)
6.69E-5 14941.5 1400.8 100.0 2299.7 0.0 0.0 1.00E-5 3.00E-4
4.50E-5 22200.9 2081.3 200.0 5077.4 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 118; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.004.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.45	90.0	36.35	28.92	0.0	0.0	0.45	90.0	0.0003	23.13
3.048	0.368	90.0	36.35	28.92	0.0	0.0	0.368	90.0	0.0003	23.13
3.962	0.344	90.0	36.35	28.91	0.0	0.0	0.344	90.0	0.0003	23.13
4.877	0.319	90.0	36.35	28.85	0.0	0.0	0.319	90.0	0.0003	23.15
6.096	0.287	90.0	36.36	28.78	0.0	0.0	0.287	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.24	90.0	36.24	28.56	0.0	0.0	0.24	90.0	0.0003	23.17
9.144	0.212	90.0	36.29	28.5	0.0	0.0	0.212	90.0	0.0003	23.22
10.06	0.191	90.0	36.38	28.13	0.0	0.0	0.191	90.0	0.0003	23.41
10.97	0.17	90.0	36.41	25.88	0.0	0.0	0.17	90.0	0.0003	24.16
13.07	0.123	90.0	36.47	25.57	0.0	0.0	0.123	90.0	0.0003	24.3
13.11	0.12	90.0	36.42	25.33	0.0	0.0	0.12	90.0	0.0003	24.34
14.02	0.06	90.0	36.43	25.05	0.0	0.0	0.0601	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

```

Froude number:      45.45; effleunt density (sigma-T)      7.486; effleunt velocity      7.205(m/s);
      Depth  Amb-cur  P-dia  V-angle  Eff-sal  P-speed  Dilutn  x-posn  y-posn  Time
Step   (ft)   (m/s)   (in)   (deg)   (psu)   (m/s)   ( )    (ft)   (ft)   (s)

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```

0      46.0    0.06     6.0     15.0    15.0    7.205    1.0     0.0     0.0     0.0;
100    44.21   0.0951   42.54   16.37   33.47   1.004    7.141   6.433   0.201   1.137;
185    38.08   0.155    202.2   25.28   35.89    0.24     38.19   21.63   4.667   14.35; acute zone;
200    36.68   0.165    247.8   25.23   36.01   0.209    49.94   23.92   6.53    18.83;
203    36.41   0.167    257.1   25.04   36.03   0.205    52.61   24.32   6.933   19.77; begin overlap;
218    35.05   0.176    304.8   22.77   36.12   0.188    67.78   26.25   9.271   24.96; trap level;
265    32.96   0.191    393.4   -0.556  36.21    0.17     101.2   30.78   17.9    42.47; local maximum rise or
fall;
286    33.64   0.187    415.2   -11.71  36.23    0.174    115.4   32.82   22.91   52.17; end overlap;
296    34.84   0.179    453.6   -12.9   36.26    0.175    139.3   34.44   27.83   61.41; trap level;
300    35.31   0.176    472.7   -10.93  36.27    0.174    150.4   35.06   30.01   65.45;
304    35.6    0.173    487.5   -8.633  36.27    0.173    158.6   35.5    31.67   68.52; begin overlap;
305    35.65   0.173    490.4   -8.066  36.28    0.173    160.3   35.6    32.04   69.19; matched energy radial
vel = 0.0495m/s;
315    35.95   0.171    508.7   -2.327  36.28    0.171    170.4   36.42   35.36   75.3; bottom hit;
320    35.97   0.17     513.3    0.531   36.29    0.171    173.3   36.8    36.91   78.15; local maximum rise or
fall;

```

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.04 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)	
7.63E-5	13110.0	1363.4	100.0	2336.5	0.0	0.0	1.00E-5	3.00E-4	
5.16E-5	19395.4	2017.0	200.0	5114.3	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 119; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.004.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.45	90.0	36.35	28.92	0.0	0.0	0.45	90.0	0.0003	23.13
3.048	0.368	90.0	36.35	28.92	0.0	0.0	0.368	90.0	0.0003	23.13
3.962	0.344	90.0	36.35	28.91	0.0	0.0	0.344	90.0	0.0003	23.13
4.877	0.319	90.0	36.35	28.85	0.0	0.0	0.319	90.0	0.0003	23.15
6.096	0.287	90.0	36.36	28.78	0.0	0.0	0.287	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25
7.925	0.24	90.0	36.24	28.56	0.0	0.0	0.24	90.0	0.0003	23.17
9.144	0.212	90.0	36.29	28.5	0.0	0.0	0.212	90.0	0.0003	23.22
10.06	0.191	90.0	36.38	28.13	0.0	0.0	0.191	90.0	0.0003	23.41
10.97	0.17	90.0	36.41	25.88	0.0	0.0	0.17	90.0	0.0003	24.16
13.07	0.123	90.0	36.47	25.57	0.0	0.0	0.123	90.0	0.0003	24.3
13.11	0.12	90.0	36.42	25.33	0.0	0.0	0.12	90.0	0.0003	24.34
14.02	0.06	90.0	36.43	25.05	0.0	0.0	0.0601	90.0	0.0003	24.43

14.94 0.0 90.0 36.44 24.97 0.0 0.0 0.00001 90.0 0.0003 24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 78.38; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.24	0.0946	42.84	15.44	35.54	0.999	7.21	6.496	0.203	1.148;
181	39.6	0.145	197.1	16.66	36.26	0.236	35.77	21.57	4.355	13.78; acute zone;
200	38.4	0.153	257.5	15.38	36.31	0.194	49.98	24.89	6.848	20.03;
204	38.17	0.155	270.4	14.97	36.32	0.188	53.42	25.51	7.433	21.44; begin overlap;
228	36.78	0.164	352.8	11.6	36.36	0.166	80.1	29.12	12.05	31.99; trap level;
229	36.72	0.165	356.5	11.43	36.36	0.166	81.54	29.27	12.3	32.53; end overlap;
263	35.19	0.176	481.2	-0.459	36.38	0.16	143.0	34.59	24.96	58.77; local maximum rise or fall;
274	35.61	0.174	513.9	-5.774	36.38	0.162	164.8	36.38	31.16	71.0; bottom hit;
279	36.12	0.17	538.6	-5.921	36.38	0.163	181.9	37.54	35.72	79.87; trap level;
292	36.89	0.164	612.0	0.0527	36.39	0.162	234.0	40.97	52.31	111.8; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.55 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)
6.15E-5	16260.8	1492.6	100.0	2215.2	0.0	0.0	1.00E-5	3.00E-4
4.10E-5	24411.9	2240.8	200.0	4993.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 120; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.004.db; Diffuser table record 12: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.45	90.0	36.35	28.92	0.0	0.0	0.45	90.0	0.0003	23.13
3.048	0.368	90.0	36.35	28.92	0.0	0.0	0.368	90.0	0.0003	23.13
3.962	0.344	90.0	36.35	28.91	0.0	0.0	0.344	90.0	0.0003	23.13
4.877	0.319	90.0	36.35	28.85	0.0	0.0	0.319	90.0	0.0003	23.15
6.096	0.287	90.0	36.36	28.78	0.0	0.0	0.287	90.0	0.0003	23.18
7.468	0.25	90.0	36.38	28.63	0.0	0.0	0.25	90.0	0.0003	23.25

7.925	0.24	90.0	36.24	28.56	0.0	0.0	0.24	90.0	0.0003	23.17
9.144	0.212	90.0	36.29	28.5	0.0	0.0	0.212	90.0	0.0003	23.22
10.06	0.191	90.0	36.38	28.13	0.0	0.0	0.191	90.0	0.0003	23.41
10.97	0.17	90.0	36.41	25.88	0.0	0.0	0.17	90.0	0.0003	24.16
13.07	0.123	90.0	36.47	25.57	0.0	0.0	0.123	90.0	0.0003	24.3
13.11	0.12	90.0	36.42	25.33	0.0	0.0	0.12	90.0	0.0003	24.34
14.02	0.06	90.0	36.43	25.05	0.0	0.0	0.0601	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -45.99; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	41.4	0.132	43.64	43.72	39.69	0.981	7.349	4.662	0.249	1.113;
168	34.64	0.179	157.7	29.47	37.32	0.275	26.69	12.5	3.138	8.325; begin overlap;
200	33.17	0.19	211.4	14.83	37.06	0.214	37.09	15.13	5.557	13.31;
229	32.75	0.193	241.3	-0.493	36.95	0.198	44.37	17.37	8.326	18.7; local maximum rise or fall;
250	33.11	0.191	258.8	-11.59	36.88	0.197	50.75	19.12	10.92	23.6; acute zone;
261	33.67	0.187	275.7	-16.48	36.82	0.197	57.81	20.21	12.81	27.08; end overlap;
281	35.76	0.173	339.9	-17.54	36.68	0.19	85.06	22.71	18.6	37.5; trap level;
300	37.69	0.159	420.5	-8.474	36.6	0.177	120.8	25.14	26.89	52.33;
306	38.13	0.156	445.9	-5.351	36.59	0.173	133.3	26.03	30.61	59.06; bottom hit;
316	38.44	0.153	482.8	0.0454	36.57	0.17	152.9	27.64	38.11	72.73; local maximum rise or fall;
340	35.33	0.173	593.4	8.945	36.52	0.168	228.6	32.19	65.09	122.6; trap level;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.07 m										
conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(ppm)	(s-1)	(m/s)	(m0.67/s2)		
6.31E-5	15859.7	1444.9	100.0	2162.9	0.0	0.0	1.00E-5	3.00E-4		
4.17E-5	23969.3	21								

WINTER (UNIFORM DISTRIBUTION)

/ UM3. 8/11/2006 2:56:22 PM

Case 1; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 1: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	22.0	1.0

Simulation:

Froude number: 12.75; effleunt density (sigma-T) 1.618; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	4.314E-5	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;	
20	45.85	4.523E-5	8.784	15.5	15.22	1.62	1.475	0.567	2.733E-6	0.0936; stream limit reached;	
100	43.21	8.199E-5	39.98	32.28	31.94	0.379	7.099	6.871	0.000486	3.67;	
200	15.02	0.000112	136.6	77.31	35.6	0.218	47.27	20.97	0.0106	42.69;	
209	9.775	0.00012	151.7	79.06	35.71	0.212	56.49	22.06	0.0129	50.3; acute zone;	
217	4.6	0.000127	166.6	80.4	35.79	0.205	66.19	22.99	0.0154	58.01; matched energy radial	
vel =	0.155m/s;										
223	0.372	0.000132	178.9	81.27	35.84	0.2	74.53	23.66	0.0175	64.45; surface;	

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 4.54 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.18E-4	8416.0	709.2	100.0	2577.4	0.0	0.0	1.00E-5	3.00E-4
8.24E-5	12131.0	1022.2	200.0	5355.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 2; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 2: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	22.0	1.0

Simulation:

Froude number: 15.48; effleunt density (sigma-T) 9.156; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
20	45.85	4.523E-5	8.798	15.34	21.95	1.619	1.478	0.572	2.753E-6	0.0943; stream limit reached;
100	43.42	7.917E-5	41.0	27.71	33.32	0.362	7.146	7.064	0.000502	3.804;
187	21.37	0.000104	127.8	71.46	35.68	0.195	36.92	22.17	0.00962	40.64; acute zone;

```

200    14.26 0.000113    148.8    75.08    35.81    0.186    47.75    24.27    0.0131    52.56;
214     5.152 0.000126    175.2    78.16    35.92    0.177    63.0     26.4     0.018    68.32; matched energy radial
vel = 0.125m/s;
221   -0.0329 0.000133    190.4    79.42    35.96    0.172    72.37    27.41    0.021    77.58; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 4.84 m
  conc dilutn  width distnce  time
  (kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
1.26E-4  7954.1  734.7  100.0  2545.7  0.0    0.0 1.00E-5 3.00E-4
8.69E-5 11502.2 1062.5  200.0  5323.4  0.0    0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 3; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	22.0	1.0

Simulation:

```

Froude number:      28.18; effleunt density (sigma-T)      20.46; effleunt velocity      2.402(m/s);
  Depth  Amb-cur  P-dia  V-angle  Eff-sal  P-speed  Dilutn  x-posn  y-posn  Time
Step    (ft)    (m/s)  (in)   (deg)   (psu)   (m/s)   ( )    (ft)   (ft)   (s)

```

```

0      46.0 4.314E-5      6.0   15.0   30.0   2.402   1.0   0.0   0.0   0.0;
19     45.85 4.511E-5     8.646  15.1  31.96  1.649  1.455  0.543 2.463E-6 0.0886; stream limit reached;
100    43.8 7.393E-5      42.48  19.29 35.39  0.339  7.214  7.348 0.000525 4.002;
158    34.91 9.302E-5     116.0  42.81 35.97  0.142  22.23  22.3 0.00687 32.4; acute zone;
200    13.97 0.000114     196.3  64.68 36.12  0.11  49.18  36.52 0.0245 96.57;
209    6.898 0.000123     218.8  68.17 36.15  0.106  58.77  39.57 0.0311 118.4; matched energy radial

```

vel = 0.0698m/s;

```

216    0.719 0.000132     238.8  70.37 36.16  0.102  67.51  41.88 0.0373 137.9; surface;

```

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.07 m

```

conc dilutn width distnce time
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
1.49E-4 6713.0 833.5 100.0 2423.2 0.0 0.0 1.00E-5 3.00E-4
1.01E-4 9834.6 1221.2 200.0 5201.0 0.0 0.0 1.00E-5 3.00E-4

```

count: 2

/ UM3.

Case 4; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	22.0	1.0

Simulation:

Froude number: -14.92; effleunt density (sigma-T) 43.51; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	4.314E-5	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;	
19	45.59	4.860E-5	8.697	44.74	52.55	1.641	1.465	0.407	2.583E-6	0.0907;	stream limit reached;
100	41.08	8.914E-5	46.46	28.88	39.66	0.278	7.075	5.957	0.000743	4.47;	
151	40.04	8.986E-5	69.25	-0.501	38.71	0.176	9.801	9.663	0.00199	10.05;	local maximum rise or fall;
152	40.04	8.986E-5	69.52	-1.074	38.7	0.175	9.84	9.72	0.00201	10.15;	begin overlap;
194	40.61	8.950E-5	77.25	-25.03	38.36	0.166	11.46	12.09	0.00307	14.61;	end overlap;
200	40.8	8.938E-5	78.05	-28.43	38.3	0.167	11.75	12.45	0.00325	15.35;	
265	48.29	1.463E-5	93.56	-64.86	37.44	0.201	20.26	18.32	0.00715	31.2;	bottom hit;
292	59.5	-0.000144	121.6	-75.6	36.95	0.201	34.49	22.09	0.00973	48.98;	acute zone;
300	63.59	-0.000202	132.7	-77.54	36.85	0.198	40.42	23.06	0.00972	55.39;	
400	167.9	-0.00168	475.3	-86.91	36.33	0.111	292.9	32.85	-0.333	271.4;	
407	181.8	-0.00188	539.3	-86.94	36.32	0.0981	336.4	33.58	-0.46	312.3;	trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.70 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.87E-5	25867.9	1455.5	100.0	2493.4	0.0	0.0	1.00E-5	3.00E-4
2.66E-5	37610.3	2116.2	200.0	5271.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 5; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.000.db; Diffuser table record 5: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41

13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	22.0	1.0

Simulation:

Froude number: 25.49; effleunt density (sigma-T) 1.618; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.79	7.407E-5	42.04	20.08	31.94	0.682	7.099	7.241	0.000258	1.972;
161	33.92	9.366E-5	115.1	47.07	34.9	0.294	22.66	22.12	0.00349	16.35; acute zone;
200	14.43	0.000113	183.2	67.07	35.61	0.244	47.62	33.86	0.0108	42.95;
211	6.112	0.000124	208.2	71.01	35.74	0.235	59.2	37.0	0.0142	54.27; matched energy radial

vel = 0.167m/s;

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
217	1.023	0.000131	223.3	72.83	35.79	0.23	66.67	38.65	0.0165	61.29; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 5.67 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.47E-4	6817.7	801.6	100.0	2450.6	0.0	0.0	1.00E-5	3.00E-4
1.00E-4	9958.2	1170.9	200.0	5228.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 6; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 6: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-sp m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4

10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	22.0	1.0

Simulation:

Froude number: 30.96; effleunt density (sigma-T) 9.156; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.85	7.322E-5	42.36	18.54	33.32	0.676	7.146	7.312	0.000261	1.994;
156	35.86	9.241E-5	115.8	38.9	35.27	0.274	21.44	22.23	0.00336	15.99; acute zone;
200	15.03	0.000112	199.5	62.91	35.82	0.208	48.15	37.97	0.0129	50.98;
210	7.076	0.000123	224.5	67.18	35.9	0.201	58.69	41.62	0.0168	64.07; matched energy radial
vel = 0.133m/s;										
217	0.771	0.000132	243.8	69.7	35.94	0.195	67.42	44.09	0.0201	74.51; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.19 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.51E-4	6631.8	842.0	100.0	2404.5	0.0	0.0	1.00E-5	3.00E-4
1.02E-4	9735.8	1236.1	200.0	5182.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 7; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 7: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39

7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	22.0	1.0

Simulation:

Froude number: 56.37; effleunt density (sigma-T) 20.46; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.95	7.187E-5	42.84	16.1	35.39	0.667	7.214	7.418	0.000265	2.027;
152	38.71	9.060E-5	117.4	23.16	35.94	0.249	20.19	22.44	0.00322	15.67; acute zone;
200	18.39	0.000107	259.6	46.38	36.13	0.13	51.3	51.13	0.0211	81.86;
211	8.948	0.00012	301.5	52.55	36.15	0.12	63.4	59.11	0.0301	112.2; matched energy radial
vel = 0.0841m/s;										
217	2.65	0.000129	326.8	55.65	36.16	0.115	71.37	63.61	0.0363	132.5; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.30 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.63E-4	6144.7	987.7	100.0	2239.2	0.0	0.0	1.00E-5	3.00E-4
1.08E-4	9197.4	1478.5	200.0	5017.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 8; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.000.db; Diffuser table record 8:-----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39

3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	22.0	1.0

Simulation:

Froude number: -29.84; effluent density (sigma-T) 43.51; effluent velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	40.54	8.945E-5	44.5	41.74	39.53	0.628	7.355	5.694	0.00036	2.147;
185	33.31	9.425E-5	137.5	-0.234	37.49	0.177	19.48	20.07	0.00487	19.92; local maximum rise or fall;
187	33.31	9.425E-5	138.6	-1.379	37.48	0.176	19.63	20.3	0.00498	20.32; begin overlap;
200	33.45	9.417E-5	144.7	-8.815	37.42	0.17	20.59	21.76	0.00568	22.91;
203	33.51	9.413E-5	145.8	-10.53	37.41	0.169	20.8	22.09	0.00584	23.52; acute zone;
228	34.43	9.355E-5	153.8	-24.76	37.31	0.167	22.8	24.92	0.00733	28.97; end overlap;
296	47.85	2.422E-5	182.6	-62.94	36.88	0.199	38.22	36.5	0.0157	58.88; bottom hit;
300	50.26	-8.830E-6	188.0	-65.14	36.84	0.201	40.94	37.66	0.0167	62.95;
399	188.1	-0.00196	655.7	-84.01	36.33	0.114	290.5	61.77	-0.356	327.8; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.65 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)
5.03E-5	19899.3	1576.7	100.0	2254.8	0.0	0.0	1.00E-5 3.00E-4
3.36E-5	29728.0	2355.5	200.0	5032.5	0.0	0.0	1.00E-5 3.00E-4

count: 2

/ UM3.

Case 9; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	22.0	1.0

Simulation:

Froude number: 38.24; effleunt density (sigma-T) 1.618; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	4.314E-5	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.92	7.230E-5	42.37	17.32	31.94	1.006	7.099	7.303	0.000174	1.33;
154	37.26	9.150E-5	116.7	31.71	34.77	0.388	20.64	22.33	0.00221	10.62; acute zone;
200	16.67	0.00011	216.3	57.42	35.61	0.264	47.84	42.14	0.0101	39.88;
211	7.501	0.000122	247.0	63.0	35.74	0.252	59.48	47.31	0.0138	52.37; matched energy radial
vel = 0.173m/s;										
217	1.767	0.00013	265.2	65.62	35.8	0.246	66.98	50.03	0.0163	60.16; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.74 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
1.58E-4	6339.3	881.2	100.0	2354.1	0.0	0.0	1.00E-5	3.00E-4	
1.06E-4	9359.6	1301.0	200.0	5131.9	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 10; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.000.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	22.0	1.0

Simulation:

Froude number: 46.43; effleunt density (sigma-T) 9.156; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.94	7.198E-5	42.58	16.6	33.32	1.002	7.146	7.354	0.000175	1.34;
152	38.31	9.085E-5	115.4	26.44	35.2	0.383	19.98	22.03	0.0021	10.2; acute zone;
200	17.87	0.000108	234.7	52.08	35.82	0.228	48.8	46.19	0.0117	46.03;
211	8.692	0.000121	268.9	58.19	35.9	0.215	60.34	52.5	0.0163	61.41; matched energy radial
vel = 0.139m/s;										
218	1.641	0.00013	293.0	61.69	35.95	0.208	69.3	56.53	0.0199	73.13; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.44 m										
	conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
	1.59E-4	6270.8	930.5	100.0	2299.2	0.0	0.0	1.00E-5	3.00E-4	
	1.07E-4	9318.1	1382.7	200.0	5077.0	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 11; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	22.0	1.0

Simulation:

Froude number: 84.55; effluent density (sigma-T) 20.46; effluent velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	4.314E-5	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.98	7.147E-5	42.9	15.49	35.39	0.997	7.214	7.431	0.000177	1.354;
151	39.47	9.013E-5	116.8	18.66	35.94	0.369	19.8	22.29	0.00209	10.25; acute zone;
200	22.4	0.000102	288.4	34.38	36.13	0.161	52.24	56.95	0.0168	64.86;
214	10.84	0.000118	361.3	41.96	36.16	0.135	68.81	71.49	0.0282	103.8; matched energy radial
vel = 0.094m/s;										
220	4.651	0.000126	393.7	45.25	36.17	0.128	77.08	77.91	0.0346	124.6; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.00 m
 conc dilutn width distnce time

(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.65E-4 6066.0 1087.6 100.0 2118.1 0.0 0.0 1.00E-5 3.00E-4
 1.08E-4 9222.1 1653.6 200.0 4895.9 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 12; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.000.db; Diffuser table record 12: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	22.0	1.0

Simulation:

Froude number: -44.76; effleunt density (sigma-T) 43.51; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	4.314E-5	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	40.5	8.947E-5	43.86	43.63	39.53	0.972	7.355	5.6	0.000234	1.4;
164	28.43	9.736E-5	155.7	23.54	37.29	0.244	23.13	22.06	0.00424	16.75; acute zone;
200	26.61	9.862E-5	201.1	2.816	37.1	0.182	28.5	29.52	0.00745	28.15;
205	26.59	9.863E-5	205.4	-0.0508	37.08	0.178	29.09	30.39	0.00787	29.63; local maximum rise or fall;

```

207      26.6 9.863E-5   207.1  -1.197   37.07   0.177   29.33   30.74  0.00804   30.22; begin overlap;
248      28.25 9.760E-5   229.8  -24.58   36.96   0.167   34.05   37.64  0.0118   43.09; end overlap;
300      38.73 9.098E-5   253.6  -53.87   36.77   0.189   46.61   49.28  0.0198   70.3;
315      47.48 3.298E-5   271.8  -62.2    36.68   0.198   56.19   54.6   0.0245   86.39; bottom hit;
394      182.1 -0.00187   727.2  -81.14   36.34   0.127   264.7   86.31  -0.231   334.3; trap level;

```

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 18.47 m

```

conc dilutn width distnce time
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
5.99E-5 16689.9 1609.6 100.0 2047.0 0.0 0.0 1.00E-5 3.00E-4
3.90E-5 25622.1 2471.0 200.0 4824.8 0.0 0.0 1.00E-5 3.00E-4

```

count: 2

/ UM3.

Case 13; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	22.0	1.0

Simulation:

Froude number: 12.75; effleunt density (sigma-T) 1.618; effleunt velocity 2.402(m/s);
Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time


```

Step      (ft)      (m/s)      (in)      (deg)      (psu)      (m/s)      ( )      (ft)      (ft)      (s)
  0        46.0      0.018      6.0       15.0       5.0       2.402     1.0      0.0      0.0      0.0;
 100       43.62     0.0318     40.33     30.3       31.94     0.372     7.099    6.152    0.172    3.206;
 200       24.78     0.0498     157.6     69.63      35.65     0.177     51.02    17.26    3.982    35.32;
 232       12.73     0.0579     233.7     69.36      35.93     0.152     96.14    19.78    7.555    59.31; matched energy radial
vel = 0.0579m/s;
 233       12.31     0.0582     236.6     69.27      35.94     0.151     98.06    19.85    7.698    60.22; matched energy radial
vel = 0.0604m/s;
 239       9.726     0.0599     254.7     68.61      35.98     0.146     110.4    20.25    8.612    65.92; acute zone;
 241       8.841     0.0606     261.1     68.35      35.99     0.145     114.9    20.38    8.937    67.92; matched energy radial
vel = 0.0892m/s;
 255        2.34     0.065      310.8     65.98      36.05     0.135     151.6    21.24    11.54    83.34; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.89 m
  conc dilutn width distnce
  (kg/kg)      (m)      (m)      (hrs) (kg/kg)      (s-1)      (m/s)(m0.67/s2)
7.03E-5 14227.6 1023.9 100.0 2573.1 0.0 0.0 1.00E-5 3.00E-4
4.87E-5 20516.7 1476.5 200.0 5350.9 0.0 0.0 1.00E-5 3.00E-4
count: 2

```

/ UM3.

Case 14; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.001.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia P-elev V-angle H-angle Ports AcuteMZ ChrncMZ P-depth Ttl-flo Eff-sal Temp Polutnt
 (in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 1.0 15.0 22.0 1.0

Simulation:

Froude number: 15.48; effleunt density (sigma-T) 9.156; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	43.78	0.0309	41.23	26.13	33.32	0.357	7.146	6.299	0.177	3.306;
200	26.03	0.0494	173.9	65.32	35.84	0.147	51.54	19.13	4.609	41.03;
219	19.55	0.0532	220.0	65.98	35.97	0.133	75.08	20.98	6.835	56.55; acute zone;
240	11.44	0.0588	285.7	63.95	36.07	0.12	113.8	22.72	10.17	78.21; matched energy radial
vel = 0.0624m/s;										
241	11.02	0.0591	289.2	63.8	36.07	0.119	116.1	22.79	10.36	79.38; matched energy radial
vel = 0.0653m/s;										
243	10.19	0.0596	296.3	63.48	36.08	0.118	120.8	22.94	10.75	81.77; matched energy radial
vel = 0.0717m/s;										
259	3.229	0.0644	361.1	60.1	36.13	0.109	165.8	24.05	14.31	103.0; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.17 m										
conc dilutn width distnce time										
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)										
6.80E-5 14705.8 1124.4 100.0 2540.8 0.0 0.0 1.00E-5 3.00E-4										
4.70E-5 21276.1 1626.8 200.0 5318.6 0.0 0.0 1.00E-5 3.00E-4										
count: 2										

/ UM3.

Case 15; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.001.db; Diffuser table record 3: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4

10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnCMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	22.0	1.0

Simulation:

Froude number: 28.18; effleunt density (sigma-T) 20.46; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.018	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.08	0.0292	42.51	18.68	35.39	0.339	7.214	6.518	0.184	3.454;
187	34.43	0.0465	190.7	43.39	36.1	0.0952	40.38	21.53	4.529	43.43; acute zone;
200	31.66	0.0474	228.1	45.77	36.13	0.0862	52.24	23.7	6.274	56.73;
275	11.0	0.0591	565.5	34.12	36.22	0.0623	230.7	32.83	27.06	193.7; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.36 m

conc	dilutn	width	distnce	time
(kg/kg)	(m)	(m)	(hrs)	(kg/kg)
5.82E-5	17188.4	1479.2	100.0	2417.6
3.97E-5	25196.6	2168.4	200.0	5195.4

count: 2

/ UM3.

Case 16; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.001.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-sp	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4

10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	22.0	1.0

Simulation:

Froude number: -14.92; effleunt density (sigma-T) 43.51; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	41.63	0.0437	47.2	31.82	39.53	0.278	7.343	5.091	0.255	3.74;
133	40.58	0.0444	72.7	13.26	38.53	0.171	10.56	7.499	0.637	7.568; begin overlap;
157	40.44	0.0444	83.24	-0.371	38.27	0.148	11.94	8.729	0.906	10.03; local maximum rise or fall;
200	40.94	0.0443	92.79	-24.73	37.97	0.141	14.03	10.78	1.441	14.73;
227	41.96	0.0425	99.05	-39.75	37.72	0.145	16.42	12.28	1.915	18.73; end overlap;
273	48.33	0.00583	118.4	-64.93	37.14	0.169	27.16	16.27	3.688	33.89; bottom hit;
300	58.01	-0.0521	154.0	-76.23	36.78	0.164	45.39	19.25	5.026	51.97;
329	65.56	-0.0981	226.5	-74.44	36.56	0.131	78.43	20.78	4.554	67.94; begin overlap;
378	73.92	-0.148	341.6	-48.57	36.4	0.117	157.9	22.01	0.203	92.38; acute zone;
400	77.81	-0.171	392.4	-35.97	36.36	0.125	220.9	22.46	-4.15	107.2;
411	79.74	-0.183	420.5	-29.83	36.34	0.131	267.1	22.66	-7.176	115.8; end overlap;
462	91.03	-0.25	586.8	-11.37	36.28	0.185	730.7	23.56	-43.75	188.8; stream limit reached;
500	101.1	-0.31	756.5	-5.128	36.27	0.236	1550.8	24.13	-120.4	299.5;
502	101.6	-0.313	767.0	-4.871	36.26	0.239	1613.4	24.16	-126.7	307.5; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 19.48 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.10E-5	90713.8	1513.7	100.0	1686.1	0.0	0.0	1.00E-5	3.00E-4
6.78E-6	1.48E+5	2462.9	200.0	4463.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 17; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.001.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spdx	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	22.0	1.0

Simulation:

Froude number: 25.49; effleunt density (sigma-T) 1.618; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.018	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	43.94	0.03	42.07	19.71	31.94	0.681	7.099	6.8	0.0982	1.825;
175	33.13	0.0469	150.2	50.11	35.26	0.236	30.99	22.14	1.988	19.64; acute zone;
200	23.97	0.0501	207.5	60.96	35.65	0.203	50.84	27.87	4.041	35.18;
226	11.14	0.0589	286.1	66.56	35.89	0.179	85.05	32.99	7.385	58.03; matched energy radial
vel = 0.0957m/s;										
227	10.6	0.0593	289.7	66.65	35.9	0.178	86.75	33.16	7.54	59.03; matched energy radial
vel = 0.101m/s;										
229	9.52	0.06	297.0	66.81	35.91	0.176	90.26	33.5	7.858	61.06; matched energy radial
vel = 0.114m/s;										
242	2.24	0.065	350.1	66.93	35.99	0.164	116.8	35.54	10.17	75.3; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.89 m										
	conc	dilutn	width	distnce	time					
	(kg/kg)	(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
	9.70E-5	10307.2	1085.0	100.0	2464.8	0.0	0.0	1.00E-5	3.00E-4	
	6.65E-5	15031.9	1582.3	200.0	5242.6	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 18; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.001.db; Diffuser table record 6: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	22.0	1.0

Simulation:

Froude number: 30.96; effleunt density (sigma-T) 9.156; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.018	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	44.0	0.0297	42.39	18.27	33.32	0.675	7.146	6.864	0.0992	1.844;
170	35.49	0.0461	149.5	41.21	35.52	0.218	28.53	22.09	1.839	18.73; acute zone;
200	25.62	0.0495	227.0	55.27	35.84	0.172	51.54	30.14	4.579	39.81;
226	13.4	0.0574	316.4	61.64	36.01	0.148	86.24	36.22	8.527	67.13; matched energy radial
vel = 0.0729m/s;										
227	12.89	0.0577	320.4	61.75	36.01	0.147	87.97	36.43	8.709	68.32; matched energy radial
vel = 0.0763m/s;										

230 11.35 0.0588 332.8 62.02 36.03 0.145 93.35 37.02 9.27 71.96; matched energy radial
 vel = 0.0885m/s;
 245 3.415 0.0643 403.2 61.92 36.09 0.133 125.6 39.73 12.46 91.75; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.24 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 9.53E-5 10495.9 1182.4 100.0 2425.2 0.0 0.0 1.00E-5 3.00E-4
 6.50E-5 15373.1 1731.9 200.0 5203.0 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 19; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.001.db; Diffuser table record 7: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	22.0	1.0

Simulation:

Froude number: 56.37; effleunt density (sigma-T) 20.46; effleunt velocity 4.804(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time
 Step (ft) (m/s) (in) (deg) (psu) (m/s) () (ft) (ft) (s)
 0 46.0 0.018 6.0 15.0 30.0 4.804 1.0 0.0 0.0 0.0;

```

100    44.08  0.0292  42.84  16.01  35.39  0.667  7.214  6.96  0.101  1.874;
165    38.71  0.045   150.1  23.82  36.01  0.197  26.12  22.13  1.675  17.87; acute zone;
200    31.39  0.0475  275.0  34.46  36.13  0.118  52.24  34.5  5.635  49.2;
232    20.73  0.0524  442.6  41.12  36.19  0.0862  98.44  45.46  13.05  101.8; matched energy radial
vel = 0.0383m/s;
233    20.37  0.0526  448.9  41.15  36.19  0.0855  100.4  45.75  13.34  103.8; matched energy radial
vel = 0.0392m/s;
242    17.11  0.0549  508.4  40.82  36.2  0.0797  120.0  48.27  16.11  122.2; matched energy radial
vel = 0.0493m/s;
259    10.9  0.0592  632.5  38.54  36.21  0.0723  168.0  52.44  22.33  161.7; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.07 m
  conc dilutn width distnce time
  (kg/kg)      (m)      (m)      (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
8.51E-5 11753.0 1553.1 100.0 2295.2 0.0 0.0 1.00E-5 3.00E-4
5.72E-5 17472.4 2308.9 200.0 5073.0 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 20; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.001.db; Diffuser table record 8: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)

6.0 3.0 45.0 0.0 1.0 22.0 200.0 46.0 2.0 60.0 22.0 1.0

Simulation:

Froude number: -29.84; effleunt density (sigma-T) 43.51; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	41.02	0.0442	44.35	42.09	39.53	0.633	7.355	5.17	0.132	1.899;
168	34.6	0.0465	145.9	13.55	37.38	0.172	21.32	15.44	1.691	14.93; begin overlap;
192	34.3	0.0466	167.5	-0.0616	37.25	0.148	24.17	17.88	2.338	19.86; local maximum rise or fall;
200	34.34	0.0466	172.3	-4.606	37.22	0.145	24.93	18.64	2.555	21.5;
233	35.19	0.0463	186.3	-23.28	37.11	0.141	28.21	21.76	3.538	28.82; acute zone;
261	37.21	0.0456	199.3	-38.85	36.98	0.144	33.12	24.82	4.661	37.05; end overlap;
300	46.02	0.0204	237.2	-59.75	36.72	0.158	51.01	31.05	7.833	59.92;
302	46.93	0.0152	239.4	-60.85	36.71	0.159	52.43	31.49	8.101	61.93; bottom hit;
344	67.58	-0.11	364.5	-75.7	36.48	0.138	106.7	38.28	11.11	104.3; begin overlap;
400	80.1	-0.185	538.4	-49.11	36.37	0.124	206.9	40.88	5.962	138.3;
442	89.7	-0.242	638.5	-25.87	36.32	0.154	359.4	42.42	-7.08	174.8; stream limit reached;
445	90.39	-0.246	647.6	-24.22	36.31	0.157	378.7	42.51	-8.572	178.0; end overlap;
500	106.6	-0.343	885.0	-6.705	36.27	0.249	1121.0	44.46	-87.56	295.3;
507	108.8	-0.356	925.3	-5.581	36.27	0.262	1287.7	44.69	-108.5	320.3; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 23.50 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.43E-5	69962.4	1764.6	100.0	1784.2	0.0	0.0	1.00E-5	3.00E-4
8.94E-6	1.11E+5	2821.5	200.0	4562.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 21; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.001.db; Diffuser table record 9: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39

7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	22.0	1.0

Simulation:

Froude number: 38.24; effleunt density (sigma-T) 1.618; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.01	0.0296	42.38	17.2	31.94	1.006	7.099	6.995	0.068	1.261;
163	37.16	0.0455	138.0	32.92	35.01	0.331	24.66	22.19	1.103	11.69; acute zone;
200	24.79	0.0497	240.7	51.93	35.65	0.227	50.99	35.0	3.81	32.77;
223	12.04	0.0582	324.2	60.79	35.87	0.197	80.39	42.61	6.997	54.88; matched energy radial
224	11.41	0.0586	328.3	61.07	35.88	0.196	82.0	42.91	7.167	56.0; matched energy radial
225	10.78	0.0591	332.4	61.34	35.89	0.195	83.64	43.21	7.339	57.13; matched energy radial
237	2.892	0.0645	386.9	63.63	35.96	0.183	106.1	46.58	9.613	71.48; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.83 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.12E-4	8891.0	1138.5	100.0	2375.1	0.0	0.0	1.00E-5	3.00E-4
7.63E-5	13095.5	1676.9	200.0	5152.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 22; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.001.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38

0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	22.0	1.0

Simulation:

Froude number: 46.43; effleunt density (sigma-T) 9.156; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.04	0.0294	42.59	16.52	33.32	1.002	7.146	7.043	0.0685	1.27;
161	38.19	0.0451	136.8	27.4	35.37	0.326	23.88	22.01	1.049	11.31; acute zone;
200	26.62	0.0491	258.9	45.48	35.85	0.198	51.67	37.08	4.182	35.91;
224	14.03	0.0568	359.8	55.28	36.0	0.165	83.1	46.41	8.126	63.51; matched energy radial
vel = 0.0884m/s;										
225	13.43	0.0573	364.6	55.58	36.0	0.164	84.76	46.77	8.329	64.86; matched energy radial
vel = 0.0929m/s;										
227	12.23	0.0581	374.2	56.14	36.01	0.162	88.18	47.47	8.742	67.59; matched energy radial
vel = 0.104m/s;										
240	4.09	0.0637	443.4	58.6	36.07	0.149	114.1	51.67	11.72	86.49; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.26 m										
conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
1.10E-4	9047.9	1234.7	100.0	2329.2	0.0	0.0	1.00E-5	3.00E-4		
7.46E-5	13397.3	1828.2	200.0	5107.0	0.0	0.0	1.00E-5	3.00E-4		
count: 2										

/ UM3.

Case 23; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.001.db; Diffuser table record 11: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	22.0	1.0

Simulation:

Froude number: 84.55; effleunt density (sigma-T) 20.46; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.07	0.0293	42.9	15.46	35.39	0.997	7.214	7.115	0.0692	1.284;
159	39.54	0.0447	136.4	18.82	35.98	0.318	23.2	21.99	1.001	11.04; acute zone;
200	31.59	0.0474	292.5	27.23	36.13	0.156	52.24	40.4	4.761	40.98;
234	19.01	0.0535	511.3	35.95	36.19	0.101	102.4	58.4	13.19	100.5; matched energy radial
vel = 0.0563m/s;										
235	18.58	0.0538	519.2	36.08	36.19	0.0994	104.5	58.89	13.52	102.7; matched energy radial
vel = 0.0579m/s;										
238	17.28	0.0547	543.5	36.42	36.19	0.0963	110.9	60.32	14.55	109.6; matched energy radial
vel = 0.0631m/s;										
253	10.76	0.0592	675.0	37.04	36.21	0.0843	149.2	66.82	20.32	146.7; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.14 m										

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    conc  dilutn  width distnce  time
(kg/kg)          (m)      (m)    (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
1.00E-4  9967.9  1582.9  100.0  2186.5    0.0    0.0 1.00E-5 3.00E-4
6.66E-5 15019.1  2385.1  200.0  4964.3    0.0    0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 24; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.001.db; Diffuser table record 12: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	22.0	1.0

Simulation:

Froude number: -44.76; effleunt density (sigma-T) 43.51; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.018	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	40.83	0.0442	43.81	43.71	39.53	0.974	7.355	5.252	0.0903	1.29;
180	29.06	0.0484	202.5	18.38	37.06	0.187	29.98	21.87	2.42	19.51; acute zone;
188	28.66	0.0485	218.3	13.88	37.01	0.173	31.99	23.26	2.775	22.06; begin overlap;
200	28.3	0.0487	237.3	7.102	36.95	0.158	34.44	25.15	3.296	25.77;

213	28.19	0.0487	252.3	-0.275	36.91	0.148	36.54	27.05	3.857	29.73; local maximum rise or fall;
282	32.62	0.0472	300.8	-39.01	36.73	0.144	50.34	37.4	7.599	55.65; end overlap;
300	36.64	0.0459	322.7	-48.71	36.66	0.149	59.51	41.09	9.351	67.57;
320	45.76	0.0233	362.5	-59.15	36.56	0.155	78.3	46.62	12.65	90.01; bottom hit;
352	67.25	-0.107	489.4	-73.53	36.43	0.141	130.9	54.6	17.24	135.7; begin overlap;
400	81.46	-0.193	660.2	-61.54	36.37	0.124	207.8	58.28	14.33	171.5;
418	85.97	-0.22	702.9	-52.36	36.35	0.127	241.0	59.28	11.55	184.6; stream limit reached;
475	100.3	-0.306	812.8	-21.4	36.3	0.179	450.7	62.06	-9.083	237.3; end overlap;
500	108.3	-0.353	907.1	-10.8	36.28	0.234	733.5	63.4	-39.77	283.6;
516	113.7	-0.385	989.0	-6.962	36.27	0.269	1006.9	64.25	-75.58	327.2; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 25.12 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.79E-5	55762.2	1922.5	100.0	1937.8	0.0	0.0	1.00E-5	3.00E-4
1.15E-5	86981.6	2998.9	200.0	4715.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 25; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.002.db; Diffuser table record 1: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
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(in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 1.0 5.0 22.0 1.0

Simulation:

Froude number: 12.75; effleunt density (sigma-T) 1.618; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	43.9	0.0604	40.52	28.7	31.94	0.368	7.099	5.605	0.301	2.866;
200	32.57	0.0942	167.9	53.41	35.65	0.157	51.29	13.98	5.588	26.19;
250	21.66	0.104	298.5	45.33	36.03	0.134	138.0	16.63	14.5	56.97; acute zone;
251	21.4	0.104	301.8	45.1	36.03	0.133	140.8	16.67	14.75	57.82; matched energy radial
vel = 0.0392m/s;										
275	14.71	0.113	391.6	38.89	36.12	0.128	226.4	17.64	22.16	81.37; matched energy radial
vel = 0.0707m/s;										
276	14.41	0.114	395.7	38.62	36.12	0.127	230.9	17.68	22.53	82.51; matched energy radial
vel = 0.0729m/s;										
279	13.51	0.115	408.3	37.82	36.13	0.127	245.1	17.79	23.68	86.01; matched energy radial
vel = 0.08m/s;										
293	9.085	0.121	470.7	34.13	36.16	0.126	323.4	18.26	29.79	104.2; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.96 m										
	conc (kg/kg)	dilutn	width (m)	distance (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
	3.85E-5	25955.6	1326.2	100.0	2481.9	0.0	0.0	1.00E-5	3.00E-4	
	2.65E-5	37784.0	1930.5	200.0	5259.7	0.0	0.0	1.00E-5	3.00E-4	
count: 2										

/ UM3.

Case 26; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.002.db; Diffuser table record 2: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-sp (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4

10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	22.0	1.0

Simulation:

Froude number: 15.48; effleunt density (sigma-T) 9.156; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	44.04	0.0588	41.32	24.86	33.32	0.356	7.146	5.723	0.309	2.944;
200	34.21	0.0931	182.0	46.36	35.84	0.134	51.57	14.91	6.032	28.62;
241	26.81	0.0982	289.7	40.04	36.07	0.119	116.1	17.41	13.48	55.04; acute zone;
279	17.36	0.11	431.7	31.64	36.17	0.114	246.4	19.26	26.53	97.7; matched energy radial
vel = 0.0592m/s;										
280	17.08	0.11	436.1	31.39	36.17	0.114	251.4	19.31	26.99	99.13; matched energy radial
vel = 0.0608m/s;										
287	15.07	0.113	467.6	29.65	36.18	0.114	288.7	19.6	30.41	109.8; matched energy radial
vel = 0.0738m/s;										
299	11.35	0.118	524.8	27.02	36.19	0.115	366.2	20.08	37.35	130.7; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.33 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.57E-5	27984.0	1407.7	100.0	2418.8	0.0	0.0	1.00E-5	3.00E-4
2.44E-5	41016.5	2063.3	200.0	5196.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 27; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.002.db; Diffuser table record 3: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38

3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	22.0	1.0

Simulation:

Froude number: 28.18; effleunt density (sigma-T) 20.46; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.28	0.0561	42.46	18.17	35.39	0.34	7.214	5.9	0.32	3.06;
200	38.63	0.0901	202.1	25.66	36.12	0.101	47.9	16.42	6.26	31.46;
228	36.02	0.0919	275.7	22.45	36.18	0.0947	83.39	18.79	11.62	51.73; acute zone;
300	22.89	0.102	558.4	13.28	36.23	0.0963	347.0	24.7	54.09	196.2;
314	19.13	0.107	636.5	10.4	36.24	0.0979	457.9	25.79	72.18	254.3; trap level;
315	18.85	0.107	642.4	10.17	36.24	0.098	467.0	25.87	73.72	259.2; matched energy radial

vel = 0.0696m/s;

320	17.47	0.109	672.4	9.011	36.24	0.0988	515.6	26.27	82.04	285.3; surface;
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Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.08 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.00E-5	33386.2	1528.2	100.0	2048.4	0.0	0.0	1.00E-5	3.00E-4
1.95E-5	51244.0	2345.7	200.0	4826.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 28; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.002.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	22.0	1.0

Simulation:

Froude number: -14.92; effleunt density (sigma-T) 43.51; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0359	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	42.11	0.0818	46.34	33.82	39.53	0.289	7.355	4.407	0.408	3.123;
128	41.14	0.0883	72.28	20.14	38.44	0.18	11.02	6.19	0.971	6.014; begin overlap;
166	40.79	0.0886	94.08	-0.156	37.94	0.139	14.31	7.948	1.852	9.99; local maximum rise or fall;
200	41.1	0.0884	104.7	-18.82	37.69	0.133	16.82	9.448	2.815	14.11;
233	42.31	0.0809	119.5	-35.61	37.34	0.134	22.12	11.16	4.227	19.9; end overlap;
272	47.52	0.0205	150.9	-55.42	36.89	0.144	37.72	14.15	8.032	35.77; bottom hit;
300	55.41	-0.0742	184.5	-71.07	36.68	0.142	56.32	16.43	11.28	53.8;
308	56.81	-0.0917	202.0	-74.8	36.63	0.133	63.2	16.74	11.57	57.07; begin overlap;
400	68.28	-0.23	316.0	-46.38	36.42	0.127	145.8	18.64	8.009	89.2;
441	73.15	-0.288	350.9	-23.5	36.35	0.17	239.7	19.21	0.655	107.7; end overlap;
464	76.62	-0.329	388.6	-13.45	36.31	0.217	375.2	19.55	-10.58	126.1; acute zone;
500	82.64	-0.401	477.4	-6.374	36.28	0.292	765.3	20.03	-49.37	172.3;
532	88.43	-0.47	590.1	-3.391	36.27	0.36	1442.3	20.39	-122.4	239.9; stream limit reached;
554	92.39	-0.517	689.7	-2.06	36.26	0.407	2229.7	20.6	-209.1	308.5; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.52 m

conc (kg/kg)	dilutn	width (m)	distance (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.00E-5	99959.5	1085.3	100.0	998.6	0.0	0.0	1.00E-5	3.00E-4
5.15E-6	1.94E+5	2110.3	200.0	3776.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 29; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.002.db; Diffuser table record 5: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	22.0	1.0

Simulation:

Froude number: 25.49; effleunt density (sigma-T) 1.618; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	44.07	0.0585	42.09	19.37	31.94	0.68	7.099	6.426	0.181	1.703;
191	32.96	0.0939	193.3	47.94	35.54	0.197	42.92	21.57	4.83	22.71; acute zone;
200	30.86	0.0954	217.7	49.61	35.65	0.186	51.29	22.96	6.008	27.15;

273 8.452 0.122 518.9 41.35 36.11 0.14 217.6 31.23 24.39 87.38; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.18 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s) (m0.67/s2)
 5.96E-5 16774.4 1403.8 100.0 2442.3 0.0 0.0 1.00E-5 3.00E-4
 4.08E-5 24523.1 2052.3 200.0 5220.1 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 30; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.002.db; Diffuser table record 6: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	22.0	1.0

Simulation:

Froude number: 30.96; effleunt density (sigma-T) 9.156; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0359	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	44.12	0.0579	42.38	18.03	33.32	0.675	7.146	6.485	0.183	1.72;
186	35.37	0.0923	192.1	39.76	35.72	0.182	39.16	21.6	4.48	21.7; acute zone;

200 32.63 0.0942 233.5 42.49 35.85 0.163 51.67 24.04 6.406 29.09;
 278 11.42 0.118 583.4 33.55 36.17 0.123 242.1 33.86 29.39 105.2; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.82 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 5.62E-5 17781.1 1504.2 100.0 2398.2 0.0 0.0 1.00E-5 3.00E-4
 3.83E-5 26121.6 2209.8 200.0 5176.0 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 31; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.002.db; Diffuser table record 7: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	22.0	1.0

Simulation:

Froude number: 56.37; effleunt density (sigma-T) 20.46; effleunt velocity 4.804(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time
 (ft) (m/s) (in) (deg) (psu) (m/s) () (ft) (ft) (s)
 0 46.0 0.0359 6.0 15.0 30.0 4.804 1.0 0.0 0.0 0.0;
 100 44.19 0.0571 42.82 15.92 35.39 0.667 7.214 6.572 0.186 1.747;

180 38.77 0.0899 191.8 22.55 36.07 0.163 35.15 21.65 4.026 20.47; acute zone;
 200 36.6 0.0915 260.4 23.88 36.13 0.131 51.69 25.72 6.949 32.06;
 261 27.62 0.0977 544.6 18.99 36.21 0.0995 170.8 36.27 26.45 101.1; matched energy radial
 vel = 0.0409m/s;
 262 27.42 0.0978 550.3 18.86 36.21 0.0994 174.2 36.44 27.02 103.0; matched energy radial
 vel = 0.0416m/s;
 287 21.45 0.104 706.7 15.19 36.23 0.099 285.8 40.64 46.15 166.2; matched energy radial
 vel = 0.0679m/s;
 295 19.23 0.107 762.9 13.63 36.23 0.0996 334.8 41.98 54.79 193.8; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 19.38 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 4.65E-5 21509.4 1720.3 100.0 2193.4 0.0 0.0 1.00E-5 3.00E-4
 3.09E-5 32380.5 2589.7 200.0 4971.2 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 32; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.002.db; Diffuser table record 8: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	22.0	1.0

Simulation:

Froude number: -29.84; effleunt density (sigma-T) 43.51; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	0.0359	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;	
100	41.38	0.0881	44.2	42.23	39.53	0.638	7.355	4.771	0.232	1.716;	
165	35.87	0.092	146.8	19.58	37.31	0.181	22.83	12.67	2.651	11.9;	begin overlap;
200	35.18	0.0925	189.1	1.054	37.07	0.143	29.61	15.88	4.643	19.4;	
202	35.18	0.0925	190.8	-0.0372	37.06	0.142	29.93	16.05	4.767	19.86;	local maximum rise or fall;
249	36.57	0.0916	225.2	-25.37	36.86	0.135	39.51	20.37	8.347	32.92;	acute zone;
263	37.81	0.0908	243.6	-32.04	36.77	0.134	46.09	21.89	9.958	38.69;	end overlap;
294	44.44	0.0591	322.5	-44.11	36.55	0.133	80.0	26.28	16.76	62.69;	bottom hit;
300	46.81	0.031	335.2	-47.47	36.53	0.135	87.35	27.28	18.81	70.17;	
325	56.72	-0.0893	389.4	-61.83	36.46	0.13	114.9	30.42	25.2	97.28;	begin overlap;
400	70.52	-0.256	545.7	-68.74	36.38	0.109	187.6	33.4	26.38	136.3;	
488	84.01	-0.417	557.8	-21.02	36.32	0.198	351.8	35.53	10.7	182.6;	end overlap;
500	86.53	-0.447	564.4	-14.72	36.31	0.239	433.1	35.87	2.575	194.3;	
526	92.25	-0.515	614.9	-6.981	36.28	0.335	724.7	36.58	-30.8	229.7;	stream limit reached;
566	100.4	-0.613	775.8	-2.539	36.27	0.463	1600.2	37.47	-147.0	316.6;	trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 19.70 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.18E-5	84347.0	1435.4	100.0	1493.1	0.0	0.0	1.00E-5	3.00E-4
7.01E-6	1.43E+5	2427.4	200.0	4270.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 33; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.002.db; Diffuser table record 9: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4

9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	22.0	1.0

Simulation:

Froude number: 38.24; effleunt density (sigma-T) 1.618; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.1	0.0582	42.37	17.08	31.94	1.006	7.099	6.721	0.128	1.2;
173	37.02	0.0911	164.2	33.51	35.23	0.285	30.06	22.06	2.547	13.0; acute zone;
200	30.56	0.0956	247.8	43.57	35.65	0.215	51.29	29.27	5.861	25.93;
263	8.522	0.122	552.3	44.46	36.08	0.151	178.5	41.52	21.86	79.11; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.03 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
7.51E-5	13306.2	1444.9	100.0	2380.5	0.0	0.0	1.00E-5	3.00E-4
5.10E-5	19586.6	2126.9	200.0	5158.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 34; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.002.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39

7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	22.0	1.0

Simulation:

Froude number: 46.43; effleunt density (sigma-T) 9.156; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.12	0.058	42.58	16.43	33.32	1.002	7.146	6.766	0.129	1.209;
171	38.06	0.0904	163.4	27.84	35.53	0.279	29.1	21.99	2.438	12.66; acute zone;
200	32.21	0.0944	261.5	36.81	35.85	0.194	51.67	30.27	6.154	27.3;
218	27.44	0.0977	338.3	40.47	35.97	0.166	73.79	34.96	9.723	40.32; matched energy radial
vel = 0.0426m/s;										
219	27.15	0.0979	343.0	40.6	35.97	0.165	75.26	35.2	9.95	41.13; matched energy radial
vel = 0.0433m/s;										
242	20.15	0.106	462.6	40.95	36.07	0.143	118.7	40.22	16.15	62.43; matched energy radial
vel = 0.0685m/s;										
243	19.83	0.106	468.3	40.85	36.08	0.142	121.0	40.41	16.47	63.48; matched energy radial
vel = 0.0701m/s;										
249	17.89	0.109	503.9	40.1	36.1	0.139	136.3	41.54	18.44	69.98; matched energy radial
vel = 0.0814m/s;										
268	11.4	0.118	626.2	36.5	36.15	0.131	198.6	44.76	26.02	93.85; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.90 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
7.11E-5	14071.2	1557.4	100.0	2339.4	0.0	0.0	1.00E-5	3.00E-4
4.80E-5	20810.5	2303.4	200.0	5117.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 35; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.002.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	22.0	1.0

Simulation:

Froude number: 84.55; effleunt density (sigma-T) 20.46; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0359	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.15	0.0576	42.89	15.43	35.39	0.998	7.214	6.834	0.131	1.222;
169	39.47	0.0895	163.6	18.71	36.03	0.269	28.27	22.07	2.343	12.44; acute zone;
200	35.54	0.0922	283.3	21.7	36.13	0.167	52.24	31.77	6.569	29.33;
256	25.97	0.0988	613.6	20.1	36.21	0.107	156.3	47.09	24.44	92.4; matched energy radial
vel = 0.0528m/s;										
257	25.76	0.099	620.7	19.98	36.21	0.107	159.4	47.34	24.96	94.14; matched energy radial
vel = 0.0537m/s;										
271	22.62	0.102	724.7	17.97	36.22	0.104	210.3	50.79	33.45	122.3; matched energy radial
vel = 0.0692m/s;										
282	19.86	0.106	812.3	16.03	36.23	0.103	261.5	53.48	42.13	150.4; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 20.63 m										
conc	dilutn	width	distnce	time						
(kg/kg)	(m)	(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
6.07E-5	16482.7	1797.0	100.0	2201.3	0.0	0.0	1.00E-5	3.00E-4		

4.03E-5 24788.2 2702.5 200.0 4979.1 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 36; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.002.db; Diffuser table record 12: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	22.0	1.0

Simulation:

Froude number: -44.76; effleunt density (sigma-T) 43.51; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0359	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	41.11	0.0883	43.75	43.74	39.53	0.976	7.355	4.962	0.165	1.201;
185	30.67	0.0956	218.1	19.88	36.96	0.185	34.22	18.96	4.311	17.37; begin overlap;
200	29.97	0.0961	250.7	12.22	36.86	0.161	39.34	21.06	5.598	21.95;
202	29.91	0.0962	254.5	11.17	36.85	0.159	39.95	21.33	5.779	22.59; acute zone;
223	29.59	0.0964	287.4	-0.0964	36.78	0.143	45.76	24.12	7.792	29.63; local maximum rise or fall;
280	33.08	0.0941	365.2	-29.86	36.6	0.135	69.5	32.23	15.56	56.18; end overlap;

300	37.87	0.0909	434.3	-37.86	36.5	0.134	97.2	36.16	21.27	75.35;
310	41.62	0.0883	481.1	-40.59	36.45	0.133	118.5	38.28	25.29	88.84; bottom hit;
338	57.0	-0.0914	589.8	-55.19	36.39	0.127	171.6	43.95	38.5	137.2; begin overlap;
400	71.88	-0.272	797.1	-77.01	36.35	0.1	245.2	47.64	42.71	182.4;
500	88.51	-0.471	781.6	-27.9	36.31	0.165	382.7	50.87	29.91	239.1;
519	92.04	-0.513	751.4	-17.31	36.3	0.219	468.6	51.48	21.12	254.2; end overlap;
521	92.46	-0.518	749.3	-16.26	36.3	0.227	482.6	51.55	19.7	256.2; stream limit reached;
560	102.6	-0.639	806.6	-4.383	36.27	0.416	1031.8	53.19	-54.51	325.0; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 20.49 m

conc	dilutn	width	distnce	time						
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
1.56E-5	64160.7	1760.6	100.0	2132.9	0.0	0.0	1.00E-5	3.00E-4		
1.02E-5	97349.8	2671.3	200.0	4910.7	0.0	0.0	1.00E-5	3.00E-4		

count: 2

/ UM3.

Case 37; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.003.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	22.0	1.0

Simulation:

Froude number: 12.75; effleunt density (sigma-T) 1.618; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	44.12	0.0869	40.59	27.32	31.94	0.367	7.099	5.166	0.403	2.599;
200	37.04	0.137	163.9	37.83	35.64	0.162	50.38	11.55	5.922	19.62;
254	29.58	0.144	287.3	28.96	36.04	0.154	146.7	13.81	17.32	46.71; acute zone;
300	19.18	0.161	450.8	21.57	36.17	0.155	364.9	15.34	39.69	95.67;
313	15.48	0.168	508.9	19.31	36.19	0.158	472.0	15.71	49.69	116.4; matched energy radial

vel = 0.108m/s;

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
320	13.33	0.173	542.4	18.19	36.19	0.16	542.2	15.9	56.05	129.3; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.78 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.51E-5	39825.0	1398.5	100.0	2284.5	0.0	0.0	1.00E-5	3.00E-4
1.69E-5	59281.7	2081.8	200.0	5062.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 38; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.003.db; Diffuser table record 2: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia P-elev V-angle H-angle Ports AcuteMZ ChrncMZ P-depth Ttl-flo Eff-sal Temp Polutnt
 (in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 1.0 15.0 22.0 1.0

Simulation:

Froude number: 15.48; effleunt density (sigma-T) 9.156; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	44.24	0.0848	41.31	23.77	33.32	0.356	7.146	5.263	0.412	2.662;
200	38.41	0.135	168.2	31.32	35.82	0.148	48.44	12.02	5.922	20.2;
250	32.66	0.141	279.4	24.23	36.09	0.144	130.4	14.43	16.89	46.84; acute zone;
300	22.43	0.154	452.6	17.92	36.19	0.148	350.8	16.48	43.99	107.4;
321	16.59	0.166	549.7	14.77	36.21	0.152	531.8	17.21	64.09	149.9; matched energy radial

vel = 0.105m/s;

327 14.77 0.17 580.2 13.86 36.22 0.154 598.8 17.4 71.25 164.6; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.74 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.39E-5	41791.7	1421.3	100.0	2156.8	0.0	0.0	1.00E-5	3.00E-4
1.58E-5	63211.7	2149.8	200.0	4934.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 39; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.003.db; Diffuser table record 3: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41

14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	22.0	1.0

Simulation:

Froude number: 28.18; effleunt density (sigma-T) 20.46; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.44	0.0814	42.33	17.7	35.39	0.342	7.214	5.408	0.425	2.755;
157	42.37	0.119	110.5	21.46	35.96	0.15	21.31	10.58	2.584	11.58; begin overlap;
197	40.9	0.133	167.3	17.95	36.1	0.128	41.32	13.03	5.743	21.32; end overlap;
200	40.77	0.133	172.7	17.5	36.11	0.127	43.84	13.22	6.125	22.4;
239	38.27	0.135	253.0	13.1	36.18	0.128	94.9	15.88	15.24	46.01; acute zone;
300	29.78	0.144	448.6	8.738	36.23	0.137	317.6	20.23	60.68	152.3;
327	23.62	0.151	577.0	6.169	36.24	0.141	542.1	22.1	108.2	257.5; trap level;
344	19.44	0.16	673.8	3.275	36.24	0.145	759.1	23.38	159.9	368.1; matched energy radial
348	18.58	0.162	698.4	2.379	36.24	0.146	821.6	23.74	178.0	406.1; surface;

vel = 0.105m/s;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.74 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.43E-5	41153.2	1227.9	100.0	1257.0	0.0	0.0	1.00E-5	3.00E-4
1.35E-5	73723.9	2199.7	200.0	4034.8	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 40; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.003.db; Diffuser table record 4: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39

7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	22.0	1.0

Simulation:

Froude number: -14.92; effleunt density (sigma-T) 43.51; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	42.47	0.116	45.54	34.69	39.53	0.3	7.355	3.926	0.511	2.705;
122	41.75	0.13	65.09	25.82	38.57	0.21	10.41	5.053	1.0	4.469; begin overlap;
178	41.09	0.133	101.2	-0.387	37.64	0.146	17.36	7.315	2.856	10.06; local maximum rise or fall;
200	41.26	0.132	112.5	-11.27	37.41	0.142	20.76	8.272	4.011	13.27;
218	41.7	0.132	126.3	-18.9	37.18	0.141	25.99	9.13	5.323	16.79; end overlap;
259	45.83	0.0605	189.0	-35.15	36.67	0.138	56.91	11.8	12.55	35.98; bottom hit;
280	50.66	-0.0251	209.7	-47.15	36.59	0.139	71.02	13.21	17.83	52.04; acute zone;
296	54.08	-0.0883	242.0	-56.51	36.53	0.125	85.6	13.94	20.44	61.98; begin overlap;
300	54.68	-0.0994	251.2	-58.78	36.52	0.121	89.16	14.05	20.8	63.77;
400	65.01	-0.286	356.6	-61.39	36.41	0.106	155.1	15.58	21.37	95.73;
473	72.12	-0.413	347.6	-20.53	36.34	0.195	268.5	16.34	11.94	121.9; end overlap;
500	75.99	-0.482	365.8	-9.269	36.3	0.294	448.9	16.68	-4.654	142.8;
580	86.74	-0.675	594.3	-1.564	36.26	0.539	2188.7	17.38	-194.2	272.6; stream limit reached;
592	88.24	-0.703	650.2	-1.182	36.26	0.57	2775.9	17.46	-258.4	307.7; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.52 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.03E-5	97163.2	798.9	100.0	585.2	0.0	0.0	1.00E-5	3.00E-4
4.30E-6	2.33E+5	1914.9	200.0	3363.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 41; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.003.db; Diffuser table record 5: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	22.0	1.0

Simulation:

Froude number: 25.49; effleunt density (sigma-T) 1.618; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	44.18	0.0858	42.07	19.07	31.94	0.681	7.099	6.103	0.253	1.599;
200	35.36	0.138	216.1	37.41	35.65	0.188	51.04	19.1	6.556	20.64;
212	33.63	0.14	250.4	36.76	35.78	0.178	64.73	20.33	8.482	25.44; acute zone;
296	14.01	0.171	601.5	23.51	36.16	0.163	341.5	27.28	42.4	100.1; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.28 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
4.07E-5	24584.1	1520.0	100.0	2350.9	0.0	0.0	1.00E-5	3.00E-4
2.75E-5	36310.1	2245.0	200.0	5128.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 42; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.003.db; Diffuser table record 6: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	22.0	1.0

Simulation:

Froude number: 30.96; effleunt density (sigma-T) 9.156; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0539	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	44.22	0.0851	42.36	17.8	33.32	0.676	7.146	6.157	0.255	1.615;
200	36.75	0.137	223.4	30.79	35.83	0.174	50.39	19.59	6.648	21.19;
209	35.7	0.138	249.9	30.31	35.9	0.166	60.22	20.59	8.112	24.9; acute zone;
300	16.69	0.166	639.2	18.58	36.19	0.155	365.0	29.28	50.83	120.2;
302	16.04	0.167	651.0	18.25	36.19	0.155	379.7	29.44	52.79	124.3; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.54 m

conc	dilutn	width	distnce	time
(kg/kg)	(m)	(m)	(hrs)	(kg/kg)
3.82E-5	26141.4	1573.1	100.0	2266.0
2.56E-5	38999.7	2346.8	200.0	5043.8

count: 2

/ UM3.

Case 43; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.003.db; Diffuser table record 7: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	22.0	1.0

Simulation:

Froude number: 56.37; effleunt density (sigma-T) 20.46; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0539	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.29	0.084	42.78	15.83	35.39	0.669	7.214	6.237	0.259	1.639;
200	39.28	0.134	228.6	17.41	36.12	0.157	47.81	20.24	6.54	21.55;
205	38.98	0.135	242.5	17.02	36.13	0.153	52.28	20.83	7.289	23.52; acute zone;
300	26.44	0.148	648.1	8.813	36.23	0.14	339.9	34.09	67.59	163.1;
317	22.03	0.155	759.7	6.952	36.24	0.143	475.9	36.67	99.44	232.6; matched energy radial
vel = 0.103m/s;										
319	21.48	0.156	773.9	6.663	36.24	0.143	495.2	36.97	104.1	242.6; trap level;
321	20.93	0.157	788.2	6.36	36.24	0.144	515.2	37.28	108.9	253.0; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 20.02 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.37E-5	29682.2	1594.0	100.0	1803.1	0.0	0.0	1.00E-5	3.00E-4
2.11E-5	47308.5	2540.6	200.0	4580.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 44; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.003.db; Diffuser table record 8: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	22.0	1.0

Simulation:

Froude number: -29.84; effleunt density (sigma-T) 43.51; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	41.68	0.13	44.03	42.22	39.53	0.643	7.355	4.454	0.313	1.575;
160	37.28	0.137	132.0	24.64	37.35	0.216	21.95	10.14	2.729	8.526; begin overlap;
200	36.08	0.138	190.7	6.529	36.96	0.161	34.06	13.26	5.808	16.27;

214	35.98	0.138	208.5	-0.307	36.87	0.154	38.84	14.43	7.353	20.03; local maximum rise or fall;
236	36.39	0.138	240.1	-10.69	36.74	0.149	49.61	16.4	10.55	27.7; end overlap;
249	37.14	0.137	267.0	-16.14	36.65	0.148	60.88	17.73	13.31	34.19; acute zone;
278	41.22	0.133	353.7	-24.0	36.47	0.149	107.7	20.94	23.34	57.45; bottom hit;
300	48.43	0.0182	440.6	-31.54	36.4	0.143	160.8	23.64	37.03	90.23;
317	55.11	-0.105	512.6	-41.61	36.38	0.125	192.8	25.27	46.0	115.4; begin overlap;
400	68.16	-0.342	755.4	-81.36	36.34	0.0836	275.8	27.6	52.97	163.5;
500	79.26	-0.541	681.4	-31.33	36.31	0.142	373.4	29.13	45.68	205.9;
529	83.01	-0.608	603.9	-14.35	36.3	0.238	491.4	29.59	35.91	223.0; end overlap;
570	90.84	-0.748	628.7	-3.489	36.27	0.485	1095.9	30.47	-34.54	280.3; stream limit reached;
589	93.64	-0.799	695.4	-2.05	36.27	0.575	1596.5	30.76	-95.96	315.3; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.66 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.01E-5	99077.9	1515.0	100.0	1924.6	0.0	0.0	1.00E-5	3.00E-4
6.46E-6	1.55E+5	2368.0	200.0	4702.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 45; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.003.db; Diffuser table record 9: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia P-elev V-angle H-angle Ports AcuteMZ ChrncMZ P-depth Ttl-flo Eff-sal Temp Polutnt
 (in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 3.0 5.0 22.0 1.0

Simulation:

Froude number: 38.24; effleunt density (sigma-T) 1.618; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.17	0.086	42.36	16.97	31.94	1.006	7.099	6.474	0.183	1.147;
184	36.99	0.137	194.5	32.13	35.43	0.253	37.37	21.73	4.364	14.36; acute zone;
200	34.45	0.139	246.1	34.74	35.65	0.218	51.29	24.75	6.672	20.35;
284	14.43	0.17	647.5	26.4	36.14	0.168	270.6	36.48	36.17	86.23; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.45 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
5.27E-5	18973.6	1593.7	100.0	2342.8	0.0	0.0	1.00E-5	3.00E-4
3.56E-5	28049.8	2356.1	200.0	5120.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 46; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.003.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	22.0	1.0

Simulation:

Froude number: 46.43; effleunt density (sigma-T) 9.156; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.19	0.0857	42.57	16.35	33.32	1.003	7.146	6.517	0.184	1.155;
182	38.03	0.136	194.0	26.67	35.67	0.246	36.18	21.74	4.207	14.06; acute zone;
200	35.68	0.138	254.5	28.77	35.84	0.204	51.43	25.29	6.836	20.95;
289	16.85	0.165	702.4	20.59	36.18	0.157	299.0	38.99	43.68	103.8; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.84 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
4.96E-5	20142.3	1660.7	100.0	2282.1	0.0	0.0	1.00E-5	3.00E-4
3.33E-5	29991.6	2472.7	200.0	5059.8	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 47; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.003.db; Diffuser table record 11: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	22.0	1.0

Simulation:

Froude number: 84.55; effleunt density (sigma-T) 20.46; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.22	0.0852	42.87	15.4	35.39	0.998	7.214	6.582	0.186	1.167;
179	39.56	0.134	191.7	17.54	36.07	0.24	34.47	21.67	3.935	13.52; acute zone;
200	37.87	0.136	264.6	17.36	36.13	0.188	51.19	26.04	6.996	21.69;
291	25.86	0.148	738.9	9.639	36.23	0.142	299.4	44.18	57.2	137.4; matched energy radial
vel = 0.0847m/s;										
292	25.63	0.149	746.0	9.556	36.23	0.142	305.4	44.4	58.57	140.4; matched energy radial
vel = 0.0864m/s;										
300	23.66	0.151	805.4	8.773	36.23	0.143	357.8	46.21	70.74	167.0; matched energy radial
vel = 0.102m/s;										
306	22.08	0.154	852.3	8.059	36.23	0.144	402.9	47.57	81.36	189.9; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 21.65 m										
conc dilutn width distnce time										
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)										
4.22E-5 23699.1 1759.7 100.0 1979.8 0.0 0.0 1.00E-5 3.00E-4										
2.72E-5 36735.9 2727.8 200.0 4757.6 0.0 0.0 1.00E-5 3.00E-4										
count: 2										

/ UM3.

Case 48; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.003.db; Diffuser table record 12: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4

9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	22.0	1.0

Simulation:

Froude number: -44.76; effleunt density (sigma-T) 43.51; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	41.35	0.132	43.69	43.7	39.53	0.98	7.355	4.717	0.228	1.127;
180	32.88	0.141	195.2	24.57	36.98	0.221	32.89	15.12	4.454	12.35; begin overlap;
200	31.76	0.142	242.0	15.99	36.82	0.185	42.15	17.37	6.541	17.34;
222	31.01	0.143	289.1	5.76	36.7	0.165	53.29	19.93	9.634	24.56; acute zone;
234	30.89	0.143	313.6	-0.00402	36.65	0.159	60.27	21.42	11.81	29.56; local maximum rise or fall;
249	31.16	0.143	347.2	-7.065	36.59	0.154	71.74	23.41	15.2	37.26; end overlap;
292	37.49	0.137	513.5	-21.96	36.41	0.153	155.4	30.3	34.74	80.73; bottom hit;
300	39.8	0.134	556.4	-23.03	36.38	0.152	182.0	31.5	40.15	92.73;
332	56.48	-0.128	792.7	-35.88	36.33	0.124	305.5	36.75	71.59	168.7; begin overlap;
400	70.15	-0.377	1185.3	-72.99	36.31	0.0741	402.3	39.53	82.29	227.1;
500	82.33	-0.596	1158.9	-45.47	36.3	0.0932	478.8	41.61	78.77	280.6;
561	90.21	-0.737	851.6	-11.51	36.29	0.245	666.4	42.88	60.94	320.9; end overlap;
564	90.75	-0.746	835.2	-9.969	36.28	0.269	700.8	42.96	58.03	324.4; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 21.21 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.30E-5	43410.2	1816.1	100.0	2166.4	0.0	0.0	1.00E-5	3.00E-4
1.52E-5	65576.6	2743.5	200.0	4944.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 49; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.004.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	22.0	1.0

Simulation:

Froude number: 12.75; effleunt density (sigma-T) 1.618; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	44.44	0.136	40.46	24.93	31.94	0.369	7.099	4.485	0.551	2.197;
143	42.91	0.181	77.39	31.23	34.33	0.228	15.88	6.877	1.859	5.641; begin overlap;
182	41.47	0.22	116.4	25.99	35.29	0.203	31.87	8.29	4.001	9.952; end overlap;
200	40.62	0.222	138.3	22.2	35.58	0.206	45.5	8.894	5.832	13.09;
254	36.19	0.229	228.0	15.97	36.02	0.221	132.5	10.74	19.27	33.38; acute zone;
300	29.1	0.242	351.0	12.4	36.16	0.231	329.5	12.11	47.84	73.0;
351	16.68	0.276	561.4	8.089	36.22	0.249	904.7	13.31	118.1	163.6; matched energy radial
vel = 0.174m/s;										
355	15.52	0.28	581.5	7.716	36.22	0.251	979.2	13.39	126.5	173.9; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.77 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.65E-5	60642.3	1264.2	100.0	1701.0	0.0	0.0	1.00E-5	3.00E-4
1.01E-5	98398.0	2051.2	200.0	4478.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 50; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.004.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	22.0	1.0

Simulation:

Froude number: 15.48; effleunt density (sigma-T) 9.156; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0898	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	44.52	0.133	41.06	21.88	33.32	0.36	7.146	4.554	0.561	2.24;
142	43.22	0.172	78.81	26.36	34.91	0.217	15.67	7.039	1.885	5.797; begin overlap;
184	41.85	0.213	121.8	21.65	35.61	0.19	32.65	8.714	4.336	10.9; end overlap;
200	41.2	0.221	141.1	18.44	35.78	0.195	44.81	9.304	6.055	13.96;
250	37.72	0.227	221.4	13.11	36.08	0.213	120.6	11.25	19.03	34.06; acute zone;
300	30.77	0.239	352.0	10.01	36.19	0.227	324.5	13.03	53.74	82.92;
356	17.47	0.273	588.9	5.926	36.23	0.246	983.7	14.65	151.1	209.6; matched energy radial
vel =	0.173m/s;									
360	16.34	0.277	610.1	5.574	36.23	0.248	1064.8	14.75	162.4	223.7; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.50 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.70E-5	58808.5	1182.7	100.0	1396.7	0.0	0.0	1.00E-5	3.00E-4
9.83E-6	1.01E+5	2044.6	200.0	4174.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 51; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.004.db; Diffuser table record 3: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	22.0	1.0

Simulation:

Froude number: 28.18; effleunt density (sigma-T) 20.46; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.67	0.129	41.9	16.81	35.39	0.349	7.214	4.658	0.576	2.304;
143	43.69	0.158	83.57	16.83	35.86	0.198	16.08	7.443	2.048	6.355; begin overlap;
181	42.87	0.183	124.6	13.23	36.05	0.169	30.35	9.258	4.431	11.72; end overlap;

200 42.34 0.198 149.5 10.65 36.11 0.171 44.12 10.21 6.793 16.42;
 241 40.64 0.222 210.9 6.92 36.19 0.194 99.36 12.39 18.43 36.28; acute zone;
 300 34.92 0.232 357.5 4.865 36.23 0.216 319.6 15.81 76.8 122.2;
 339 27.98 0.244 512.8 2.85 36.24 0.228 691.9 18.05 182.5 266.9; trap level;
 367 23.2 0.255 663.7 -0.0631 36.24 0.237 1204.6 20.13 384.2 530.7; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.86 m

conc dilutn width distance time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.20E-5 82967.1 1604.6 200.0 2297.9 0.0 0.0 1.00E-5 3.00E-4
 count: 1

/ UM3.

Case 52; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.004.db; Diffuser table record 4: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	22.0	1.0

Simulation:

Froude number: -14.92; effleunt density (sigma-T) 43.51; effleunt velocity 2.402(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time

Step	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0898	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	43.01	0.178	43.73	34.96	39.56	0.325	7.294	3.245	0.631	2.126;
112	42.71	0.188	52.3	31.12	38.98	0.276	8.827	3.644	0.87	2.697; begin overlap;
183	41.66	0.219	98.1	4.344	37.36	0.195	21.71	5.763	3.706	8.109; end overlap;
194	41.62	0.22	106.8	-0.000422	37.19	0.196	25.83	6.2	4.806	9.957; local maximum rise or fall;
200	41.65	0.22	112.1	-2.536	37.09	0.197	28.62	6.497	5.686	11.4;
252	44.55	0.137	188.0	-15.66	36.55	0.195	80.01	9.095	20.2	34.24; acute zone;
254	44.81	0.129	192.6	-16.11	36.54	0.193	83.24	9.196	21.1	35.72; bottom hit;
292	53.6	-0.133	323.4	-35.42	36.41	0.126	154.6	11.17	40.99	75.98; begin overlap;
300	54.63	-0.165	354.6	-40.05	36.4	0.112	165.6	11.33	42.31	80.31;
400	62.54	-0.403	504.6	-79.95	36.36	0.0768	225.8	12.27	46.14	113.0;
500	69.19	-0.602	398.5	-20.86	36.32	0.182	324.7	12.88	39.52	140.7;
511	70.09	-0.629	376.0	-14.56	36.32	0.232	370.2	12.95	36.6	145.2; end overlap;
600	79.22	-0.902	510.2	-1.173	36.26	0.71	2126.4	13.57	-134.5	242.8;
627	81.34	-0.966	626.1	-0.641	36.26	0.804	3629.5	13.68	-276.6	299.6; stream limit reached;
630	81.55	-0.972	641.2	-0.597	36.26	0.813	3851.7	13.69	-296.9	307.3; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.29 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.10E-5	90482.7	528.7	100.0	261.0	0.0	0.0	1.00E-5	3.00E-4
3.24E-6	3.09E+5	1803.2	200.0	3038.8	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 53; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.004.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41

11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	22.0	1.0

Simulation:

Froude number: 25.49; effleunt density (sigma-T) 1.618; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	44.36	0.138	41.99	18.51	31.94	0.683	7.099	5.565	0.37	1.43;
161	41.65	0.219	117.9	25.47	34.91	0.281	22.75	11.59	2.669	6.821; begin overlap;
194	40.07	0.223	170.9	23.52	35.49	0.236	40.0	13.81	5.263	11.4; end overlap;
200	39.71	0.223	183.0	22.75	35.57	0.232	45.01	14.23	6.0	12.6;
238	36.58	0.229	270.8	18.35	35.93	0.225	95.49	16.92	14.1	24.89; acute zone;
300	25.87	0.247	488.4	13.5	36.16	0.237	325.9	21.16	52.78	78.17;
326	18.62	0.269	620.4	11.14	36.19	0.246	545.4	22.67	86.12	121.4; matched energy radial

vel = 0.17m/s;

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
331	17.06	0.275	648.6	10.62	36.2	0.248	602.1	22.93	94.26	131.6; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.48 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.59E-5	38562.8	1458.2	100.0	1956.5	0.0	0.0	1.00E-5	3.00E-4
1.67E-5	59984.7	2268.2	200.0	4734.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 54; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.004.db; Diffuser table record 6: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38

6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	22.0	1.0

Simulation:

Froude number: 30.96; effleunt density (sigma-T) 9.156; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	44.39	0.137	42.26	17.38	33.32	0.679	7.146	5.611	0.373	1.443;
162	41.89	0.212	122.0	21.85	35.35	0.269	23.3	11.92	2.801	7.168; begin overlap;
198	40.39	0.222	180.1	19.25	35.76	0.226	42.43	14.44	5.827	12.55; end overlap;
200	40.29	0.222	184.1	18.99	35.78	0.225	44.09	14.59	6.082	12.97;
236	37.82	0.227	266.6	14.93	36.02	0.219	89.91	17.36	13.93	25.06; acute zone;
300	28.05	0.243	488.8	10.8	36.18	0.231	319.3	22.47	58.22	86.79;
332	19.46	0.266	656.3	8.425	36.22	0.242	601.7	24.71	109.1	153.4; matched energy radial
337	17.92	0.272	686.2	7.958	36.22	0.245	664.3	25.02	119.9	166.9; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.43 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.54E-5	39387.9	1428.1	100.0	1740.9	0.0	0.0	1.00E-5	3.00E-4
1.58E-5	63454.2	2300.6	200.0	4518.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 55; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.004.db; Diffuser table record 7: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
------------	----------------	----------------	----------------	--------------	------------------	--------------	-----------------	----------------	---------------------	--------------------

0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	22.0	1.0

Simulation:

Froude number: 56.37; effleunt density (sigma-T) 20.46; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.45	0.135	42.65	15.63	35.39	0.673	7.214	5.679	0.378	1.463;
164	42.33	0.199	129.2	15.27	35.99	0.251	24.38	12.51	3.058	7.842; begin overlap;
200	41.29	0.221	187.6	11.9	36.11	0.212	43.23	15.27	6.32	13.85;
203	41.19	0.221	193.3	11.53	36.11	0.211	45.64	15.51	6.725	14.54; end overlap;
230	40.05	0.223	253.8	8.492	36.17	0.208	77.58	17.97	12.96	24.51; acute zone;
300	33.12	0.235	491.6	5.052	36.23	0.222	310.3	26.03	77.52	116.7;
339	25.1	0.249	707.2	3.003	36.24	0.233	671.7	31.05	194.8	274.0; trap level;
349	22.75	0.255	775.5	2.057	36.24	0.236	818.8	32.47	249.0	344.5; matched energy radial

vel = 0.167m/s;

354 21.72 0.259 811.6 1.439 36.24 0.238 904.0 33.25 283.8 389.3; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 20.62 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
4.34E-5	23012.9	725.2	100.0	358.7	0.0	0.0	1.00E-5	3.00E-4
1.47E-5	68024.4	2143.8	200.0	3136.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 56; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.004.db; Diffuser table record 8: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	22.0	1.0

Simulation:

Froude number: -29.84; effleunt density (sigma-T) 43.51; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0898	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	42.13	0.204	43.67	41.89	39.53	0.654	7.355	3.969	0.436	1.365;
144	39.77	0.223	94.05	30.92	37.7	0.321	16.61	6.686	1.895	4.108; begin overlap;
196	37.99	0.226	164.1	11.74	36.92	0.231	36.05	9.381	5.77	10.14; end overlap;
200	37.88	0.227	170.7	10.18	36.88	0.228	38.57	9.618	6.301	10.93;
225	37.42	0.227	218.2	-0.446	36.65	0.221	60.93	11.76	12.89	20.45; local maximum rise or fall;
235	37.69	0.227	240.4	-4.771	36.58	0.222	74.11	12.97	18.0	27.69; acute zone;
267	40.8	0.222	327.1	-11.14	36.42	0.226	139.7	15.98	37.58	54.96; bottom hit;
300	50.43	-0.0251	490.8	-17.86	36.34	0.189	268.5	19.14	76.25	112.4;
314	55.8	-0.197	663.7	-26.22	36.32	0.131	341.3	20.18	90.02	140.2; begin overlap;

```

400    66.19  -0.512  1113.5  -74.58   36.3   0.0618   444.3   21.73   100.6   194.8;
500    73.79  -0.74   1022.6  -45.64   36.3   0.0836   500.1   22.66   98.26   233.3;
559    79.12  -0.898   664.3   -9.311   36.28   0.282    693.6   23.26   84.66   262.9; end overlap;
600    84.47  -1.059   635.6   -1.787   36.27   0.675    1560.2   23.83   -2.585   315.4; trap level;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.14 m
conc dilutn width distnce time
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
8.67E-6 1.15E+5 1650.3 100.0 2574.9 0.0 0.0 1.00E-5 3.00E-4
6.01E-6 1.66E+5 2379.4 200.0 5352.6 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 57; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.004.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	22.0	1.0

Simulation:

```

Froude number: 38.24; effleunt density (sigma-T) 1.618; effleunt velocity 7.205(m/s);
Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time
Step (ft) (m/s) (in) (deg) (psu) (m/s) ( ) (ft) (ft) (s)

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0      46.0  0.0898   6.0   15.0   5.0   7.205   1.0   0.0   0.0   0.0;
100    44.3   0.14  42.32  16.76  31.94  1.009   7.099  6.045  0.276  1.055;
200    38.82  0.225  216.2  22.34  35.6   0.26   47.08  18.52  6.353  12.64;
216    37.54  0.227  261.5  20.94  35.78  0.243  64.35  20.22  9.101  16.89; acute zone;
300    23.26  0.253  605.4  13.8   36.16  0.241  339.5  29.11  57.15  82.89;
311    20.0   0.265  669.9  12.78  36.18  0.244  422.1  30.15  70.99  100.8; matched energy radial
vel = 0.171m/s;
317    18.09  0.271  707.1  12.16  36.19  0.247  475.4  30.69  79.64  111.8; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.96 m
  conc dilutn width distnce time
  (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
3.30E-5 30317.1 1583.0 100.0 2055.2 0.0 0.0 1.00E-5 3.00E-4
2.15E-5 46489.3 2427.5 200.0 4832.9 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 58; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.004.db; Diffuser table record 10: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	22.0	1.0

Simulation:

Froude number: 46.43; effleunt density (sigma-T) 9.156; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.31	0.139	42.52	16.19	33.32	1.006	7.146	6.084	0.278	1.062;
191	39.92	0.223	195.6	19.32	35.72	0.268	39.75	17.81	5.229	10.94; begin overlap;
198	39.54	0.224	212.4	18.87	35.78	0.257	44.93	18.53	6.071	12.31; end overlap;
200	39.42	0.224	217.5	18.72	35.8	0.254	46.56	18.74	6.337	12.74;
214	38.52	0.225	256.2	17.44	35.91	0.239	60.74	20.26	8.672	16.39; acute zone;
300	25.88	0.247	607.0	10.99	36.19	0.235	333.4	30.54	62.35	90.88;
317	21.06	0.261	710.5	9.754	36.21	0.24	466.9	32.48	88.66	125.3; matched energy radial

vel = 0.169m/s;

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
322	19.51	0.266	743.3	9.309	36.21	0.242	515.4	33.02	97.94	137.2; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 18.88 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.21E-5	31108.4	1574.7	100.0	1902.7	0.0	0.0	1.00E-5	3.00E-4
2.05E-5	48788.7	2469.7	200.0	4680.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 59; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.004.db; Diffuser table record 11: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	22.0	1.0

Simulation:

Froude number: 84.55; effleunt density (sigma-T) 20.46; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.34	0.139	42.81	15.31	35.39	1.001	7.214	6.143	0.281	1.073;
182	41.03	0.221	178.1	14.18	36.07	0.277	34.1	17.24	4.35	9.628; begin overlap;
200	40.37	0.222	219.1	12.63	36.11	0.246	45.83	19.17	6.384	13.04;
205	40.17	0.223	231.6	12.12	36.13	0.24	49.97	19.72	7.106	14.2; end overlap;
212	39.87	0.223	250.4	11.37	36.14	0.234	56.71	20.52	8.297	16.09; acute zone;
300	31.51	0.237	609.1	5.055	36.23	0.226	322.9	34.35	78.76	115.5;
333	24.42	0.25	829.7	3.317	36.24	0.234	620.7	40.79	177.4	246.6; trap level, matched

energy radial vel = 0.166m/s;

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
339	22.93	0.255	877.1	2.793	36.24	0.236	699.0	42.05	205.7	283.4; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 22.28 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.45E-5	28944.0	1275.0	100.0	1000.1	0.0	0.0	1.00E-5	3.00E-4
1.78E-5	56248.5	2477.7	200.0	3777.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 60; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.004.db; Diffuser table record 12: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-sp m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4

10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	22.0	1.0

Simulation:

Froude number: -44.76; effleunt density (sigma-T) 43.51; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	41.73	0.215	43.53	43.5	39.53	0.987	7.355	4.32	0.332	1.01;
167	36.5	0.229	144.7	29.08	37.17	0.322	26.21	10.17	3.428	6.236; begin overlap;
200	34.76	0.232	210.2	16.98	36.81	0.254	43.52	12.62	6.8	11.2;
208	34.38	0.233	228.4	13.88	36.74	0.246	49.63	13.25	8.022	12.94; end overlap;
234	33.31	0.235	299.4	3.276	36.55	0.231	80.09	16.01	15.64	23.54; acute zone;
242	33.2	0.235	324.7	-0.381	36.51	0.23	93.69	17.32	20.61	30.34; local maximum rise or fall;
279	37.29	0.228	465.6	-10.14	36.37	0.233	194.9	23.0	54.26	75.58; bottom hit;
300	42.36	0.207	574.6	-11.52	36.33	0.232	295.4	25.43	80.18	110.3;
330	57.3	-0.24	1001.2	-22.28	36.3	0.132	523.7	29.31	136.6	200.7; begin overlap;
400	68.14	-0.57	1754.2	-61.88	36.29	0.0547	652.7	31.24	150.9	268.9;
498	76.45	-0.819	1835.9	-59.13	36.28	0.0544	703.1	32.57	150.8	321.9; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 46.63 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.62E-5	27606.6	2530.4	100.0	1471.2	0.0	0.0	1.00E-5	3.00E-4
2.13E-5	46910.0	4299.8	200.0	4249.0	0.0	0.0	1.00E-5	3.00E-4

WINTER (NON-UNIFORM)

/ UM3.

Case 61; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	22.0	1.0

Simulation:

Froude number: 12.75; effleunt density (sigma-T) 1.618; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	2.402E-5	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
21	45.84	2.526E-5	8.958	15.54	15.63	1.589	1.504	0.602	1.711E-6	0.101; stream limit reached;
100	43.21	4.566E-5	39.98	32.28	31.94	0.379	7.099	6.872	0.000271	3.67;
200	15.02	0.000129	136.6	77.31	35.6	0.218	47.27	20.98	0.00745	42.69;
209	9.775	0.000146	151.7	79.06	35.71	0.212	56.49	22.06	0.00956	50.3; acute zone;
217	4.602	0.000163	166.6	80.39	35.79	0.205	66.18	22.99	0.0119	58.0; matched energy radial
vel = 0.155m/s;										
223	0.377	0.000176	178.9	81.27	35.84	0.2	74.53	23.66	0.0141	64.44; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 4.54 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
1.18E-4	8415.4	709.2	100.0	2577.4	0.0	0.0	1.00E-5	3.00E-4	
8.24E-5	12130.2	1022.2	200.0	5355.2	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 62; ambient file C:\Plumes\Proj\00\00_WINT_49ft_NONa.000.db; Diffuser table record 2: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	22.0	1.0

Simulation:

Froude number: 15.48; effleunt density (sigma-T) 9.156; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
21	45.84	2.526E-5	8.973	15.37	22.23	1.587	1.507	0.607	1.724E-6	0.101; stream limit reached;
100	43.42	4.409E-5	41.0	27.71	33.32	0.362	7.146	7.065	0.00028	3.805;
186	21.86	0.000107	126.4	71.15	35.67	0.195	36.19	22.0	0.00614	39.82; acute zone;
200	14.25	0.000132	148.8	75.08	35.81	0.186	47.75	24.27	0.0092	52.56;
214	5.154	0.000161	175.2	78.16	35.92	0.177	63.0	26.4	0.0137	68.31; matched energy radial
vel = 0.125m/s;										
221	-0.0273	0.000178	190.4	79.42	35.96	0.172	72.37	27.42	0.0168	77.56; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 4.84 m										
conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
1.26E-4	7953.6	734.7	100.0	2545.7	0.0	0.0	1.00E-5	3.00E-4		

8.69E-5 11501.5 1062.5 200.0 5323.4 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 63; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	22.0	1.0

Simulation:

Froude number: 28.18; effleunt density (sigma-T) 20.46; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	2.402E-5	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
20	45.84	2.519E-5	8.819	15.1	32.04	1.617	1.484	0.578	1.549E-6	0.0953; stream limit reached;
100	43.8	4.117E-5	42.48	19.29	35.39	0.339	7.214	7.349	0.000292	4.003;
157	35.19	6.957E-5	114.5	42.25	35.97	0.143	21.84	22.0	0.00386	31.51; acute zone;
200	13.96	0.000132	196.3	64.68	36.12	0.11	49.18	36.53	0.0169	96.58;
209	6.895	0.000155	218.8	68.17	36.15	0.106	58.77	39.57	0.0228	118.4; matched energy radial
vel = 0.0698m/s;										
216	0.722	0.000175	238.8	70.36	36.16	0.102	67.51	41.88	0.0286	137.8; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.07 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.49E-4	6713.0	833.6	100.0	2423.1	0.0	0.0	1.00E-5	3.00E-4
1.01E-4	9834.7	1221.2	200.0	5200.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 64; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 4: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	22.0	1.0

Simulation:

Froude number: -14.92; effleunt density (sigma-T) 43.51; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
20	45.57	2.727E-5	8.873	44.72	52.23	1.608	1.495	0.433	1.629E-6	0.0977; stream limit reached;
100	41.08	5.384E-5	46.46	28.87	39.66	0.278	7.074	5.958	0.000417	4.471;

151	40.04	5.689E-5	69.24	-0.504	38.71	0.176	9.799	9.664	0.00114	10.05; local maximum rise or fall;
152	40.04	5.689E-5	69.51	-1.077	38.7	0.175	9.838	9.721	0.00115	10.15; begin overlap;
194	40.61	5.536E-5	77.24	-25.03	38.36	0.166	11.46	12.09	0.00177	14.61; end overlap;
200	40.8	5.487E-5	78.04	-28.43	38.3	0.167	11.75	12.45	0.00188	15.35;
265	48.3	8.125E-6	93.54	-64.86	37.44	0.201	20.25	18.32	0.00419	31.2; bottom hit;
292	59.51	-8.027E-5	121.6	-75.61	36.95	0.201	34.49	22.1	0.00571	48.98; acute zone;
300	63.6	-0.000113	132.6	-77.54	36.85	0.198	40.41	23.06	0.00573	55.4;
400	168.8	-0.000944	474.8	-86.93	36.33	0.111	292.9	32.91	-0.187	273.0;
407	183.0	-0.00106	539.2	-86.98	36.32	0.098	336.4	33.65	-0.26	314.7; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.70 m

conc	dilutn	width	distnce	time						
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
3.87E-5	25864.3	1455.1	100.0	2492.8	0.0	0.0	1.00E-5	3.00E-4		
2.66E-5	37607.4	2115.8	200.0	5270.6	0.0	0.0	1.00E-5	3.00E-4		

count: 2

/ UM3.

Case 65; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)

6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 2.0 5.0 22.0 1.0

Simulation:

Froude number: 25.49; effleunt density (sigma-T) 1.618; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.79	4.124E-5	42.04	20.08	31.94	0.682	7.099	7.241	0.000144	1.972;
161	33.92	7.304E-5	115.1	47.07	34.9	0.294	22.66	22.13	0.00205	16.35; acute zone;
200	14.42	0.000131	183.2	67.07	35.61	0.244	47.62	33.87	0.00745	42.95;
211	6.112	0.000157	208.2	71.01	35.74	0.235	59.2	37.0	0.0105	54.27; matched energy radial

vel = 0.167m/s;

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
217	1.024	0.000174	223.3	72.83	35.79	0.23	66.67	38.65	0.0127	61.29; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 5.67 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.47E-4	6817.7	801.6	100.0	2450.6	0.0	0.0	1.00E-5	3.00E-4
1.00E-4	9958.1	1170.9	200.0	5228.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 66; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 6: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	22.0	1.0

Simulation:

Froude number: 30.96; effleunt density (sigma-T) 9.156; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	2.402E-5	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0	stream limit reached;
100	43.85	4.077E-5	42.36	18.54	33.32	0.676	7.146	7.313	0.000145	1.994	
156	35.86	6.774E-5	115.8	38.9	35.27	0.274	21.44	22.23	0.00194	16.0	acute zone;
200	15.03	0.000129	199.5	62.91	35.82	0.208	48.15	37.98	0.00881	50.98	
210	7.073	0.000154	224.5	67.18	35.9	0.201	58.69	41.63	0.0122	64.07	matched energy radial
vel = 0.133m/s;											
217	0.771	0.000174	243.9	69.7	35.94	0.195	67.42	44.09	0.0154	74.51	surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of										6.19 m	
conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)			
1.51E-4	6631.9	842.0	100.0	2404.5	0.0	0.0	1.00E-5	3.00E-4			
1.02E-4	9736.0	1236.1	200.0	5182.3	0.0	0.0	1.00E-5	3.00E-4			
count: 2											

/ UM3.

Case 67; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 7: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41

14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	22.0	1.0

Simulation:

Froude number: 56.37; effleunt density (sigma-T) 20.46; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.95	4.002E-5	42.84	16.1	35.39	0.667	7.214	7.419	0.000148	2.027;
152	38.71	6.004E-5	117.4	23.16	35.94	0.249	20.19	22.44	0.00183	15.68; acute zone;
200	18.38	0.000118	259.6	46.39	36.13	0.13	51.3	51.14	0.0141	81.88;
211	8.937	0.000148	301.6	52.55	36.15	0.12	63.41	59.12	0.0216	112.3; matched energy radial
vel = 0.0842m/s;										
217	2.642	0.000168	326.9	55.65	36.16	0.115	71.38	63.62	0.0273	132.5; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.30 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.63E-4	6145.4	987.8	100.0	2239.1	0.0	0.0	1.00E-5	3.00E-4
1.08E-4	9198.6	1478.6	200.0	5016.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 68; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 8: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4

10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	22.0	1.0

Simulation:

Froude number: -29.84; effleunt density (sigma-T) 43.51; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	2.402E-5	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0	stream limit reached;
100	40.54	5.516E-5	44.5	41.74	39.53	0.628	7.355	5.694	0.000202	2.147	
185	33.31	7.556E-5	137.5	-0.236	37.49	0.177	19.47	20.07	0.0031	19.92	local maximum rise or fall;
187	33.31	7.556E-5	138.6	-1.382	37.48	0.176	19.63	20.3	0.00317	20.32	begin overlap;
200	33.45	7.522E-5	144.7	-8.818	37.42	0.17	20.59	21.76	0.00365	22.91	
203	33.51	7.506E-5	145.8	-10.53	37.41	0.169	20.8	22.09	0.00377	23.52	acute zone;
227	34.38	7.273E-5	153.5	-24.2	37.31	0.167	22.7	24.81	0.00476	28.73	end overlap;
296	47.86	1.345E-5	182.6	-62.94	36.88	0.199	38.21	36.51	0.0106	58.89	bottom hit;
300	50.26	-4.955E-6	188.0	-65.14	36.84	0.201	40.94	37.66	0.0113	62.96	
398	186.7	-0.00108	642.7	-84.03	36.33	0.117	284.8	61.63	-0.185	323.0	trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.33 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
5.09E-5	19642.8	1556.3	100.0	2255.9	0.0	0.0	1.00E-5	3.00E-4
3.41E-5	29340.8	2324.6	200.0	5033.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 69; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 9: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39

3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	22.0	1.0

Simulation:

Froude number: 38.24; effluent density (sigma-T) 1.618; effluent velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.92	4.026E-5	42.37	17.32	31.94	1.006	7.099	7.303	9.672E-5	1.33;
154	37.26	6.390E-5	116.7	31.71	34.77	0.388	20.64	22.34	0.00127	10.63; acute zone;
200	16.66	0.000123	216.3	57.42	35.61	0.264	47.84	42.15	0.00681	39.89;
211	7.498	0.000153	247.0	63.0	35.74	0.252	59.48	47.31	0.01	52.37; matched energy radial
vel = 0.173m/s;										
217	1.765	0.000171	265.3	65.62	35.8	0.246	66.99	50.04	0.0123	60.16; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.74 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.58E-4	6339.5	881.2	100.0	2354.1	0.0	0.0	1.00E-5	3.00E-4
1.06E-4	9359.9	1301.1	200.0	5131.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 70; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38

0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	22.0	1.0

Simulation:

Froude number: 46.43; effleunt density (sigma-T) 9.156; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.94	4.008E-5	42.58	16.6	33.32	1.002	7.146	7.355	9.745E-5	1.34;
152	38.31	6.111E-5	115.4	26.44	35.2	0.383	19.98	22.03	0.00119	10.2; acute zone;
200	17.87	0.000119	234.7	52.08	35.82	0.228	48.81	46.2	0.00785	46.03;
211	8.685	0.000149	268.9	58.19	35.9	0.215	60.34	52.5	0.0117	61.42; matched energy radial
vel = 0.139m/s;										
218	1.637	0.000171	293.0	61.69	35.95	0.208	69.31	56.53	0.015	73.13; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.44 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.59E-4	6271.2	930.6	100.0	2299.1	0.0	0.0	1.00E-5	3.00E-4
1.07E-4	9318.8	1382.8	200.0	5076.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 71; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	22.0	1.0

Simulation:

Froude number: 84.55; effleunt density (sigma-T) 20.46; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	2.402E-5	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.98	3.980E-5	42.9	15.49	35.39	0.997	7.214	7.431	9.854E-5	1.355;
151	39.47	5.803E-5	116.8	18.66	35.94	0.369	19.8	22.3	0.00118	10.26; acute zone;
200	22.39	0.000105	288.4	34.38	36.13	0.161	52.24	56.96	0.0111	64.88;
214	10.83	0.000142	361.3	41.96	36.16	0.135	68.81	71.5	0.0203	103.8; matched energy radial
vel = 0.0941m/s;										
220	4.648	0.000161	393.7	45.25	36.17	0.128	77.08	77.92	0.0259	124.6; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.00 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
1.65E-4	6066.2	1087.7	100.0	2118.0	0.0	0.0	1.00E-5	3.00E-4	
1.08E-4	9222.5	1653.6	200.0	4895.8	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 72; ambient file C:\Plumes\Proj\00\00_WINT_49ft_NONa.000.db; Diffuser table record 12: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spdx m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	22.0	1.0

Simulation:

Froude number: -44.76; effleunt density (sigma-T) 43.51; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	40.5	5.526E-5	43.86	43.63	39.53	0.972	7.355	5.6	0.000131	1.4;
164	28.43	8.878E-5	155.7	23.54	37.29	0.244	23.13	22.06	0.00281	16.75; acute zone;
200	26.61	9.412E-5	201.0	2.814	37.1	0.182	28.5	29.53	0.00522	28.15;
205	26.59	9.419E-5	205.4	-0.0527	37.08	0.178	29.09	30.4	0.00555	29.63; local maximum rise or fall;
207	26.6	9.419E-5	207.1	-1.198	37.07	0.177	29.33	30.74	0.00568	30.22; begin overlap;
248	28.25	8.981E-5	229.8	-24.58	36.96	0.167	34.05	37.65	0.00862	43.09; end overlap;
300	38.73	6.166E-5	253.6	-53.88	36.77	0.189	46.6	49.28	0.0151	70.3;
315	47.48	1.834E-5	271.8	-62.2	36.68	0.198	56.18	54.6	0.0189	86.4; bottom hit;
394	183.1	-0.00105	727.1	-81.14	36.34	0.127	264.6	86.47	-0.119	336.1; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 18.47 m

```

    conc  dilutn  width distnce  time
(kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
6.00E-5 16683.9 1608.9 100.0 2045.6 0.0    0.0 1.00E-5 3.00E-4
3.90E-5 25617.8 2470.5 200.0 4823.4 0.0    0.0 1.00E-5 3.00E-4
count: 2

```

/ UM3.

Case 73; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.26	21.36	0.0	0.0	0.09	90.0	0.0003	25.38
0.914	0.0851	90.0	36.26	21.35	0.0	0.0	0.0851	90.0	0.0003	25.38
2.134	0.0786	90.0	36.26	21.34	0.0	0.0	0.0786	90.0	0.0003	25.38
3.048	0.0737	90.0	36.26	21.32	0.0	0.0	0.0737	90.0	0.0003	25.39
3.962	0.0688	90.0	36.26	21.31	0.0	0.0	0.0688	90.0	0.0003	25.39
4.877	0.0639	90.0	36.25	21.3	0.0	0.0	0.0639	90.0	0.0003	25.38
6.096	0.0573	90.0	36.25	21.29	0.0	0.0	0.0573	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0479	90.0	36.25	21.26	0.0	0.0	0.0479	90.0	0.0003	25.4
9.144	0.0424	90.0	36.25	21.25	0.0	0.0	0.0424	90.0	0.0003	25.4
10.06	0.0382	90.0	36.25	21.24	0.0	0.0	0.0382	90.0	0.0003	25.4
10.97	0.034	90.0	36.25	21.22	0.0	0.0	0.034	90.0	0.0003	25.41
11.89	0.0299	90.0	36.25	21.21	0.0	0.0	0.0299	90.0	0.0003	25.41
13.07	0.0245	90.0	36.25	21.2	0.0	0.0	0.0245	90.0	0.0003	25.41
14.02	0.012	90.0	36.25	21.19	0.0	0.0	0.012	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	22.0	1.0

Simulation:

Froude number: 12.75; effleunt density (sigma-T) 1.618; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.012	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	43.5	0.0217	40.24	30.91	31.94	0.374	7.099	6.366	0.121	3.342;
200	23.39	0.0513	154.2	71.56	35.64	0.181	50.02	18.01	2.884	35.9;
229	13.51	0.0674	223.6	69.92	35.91	0.153	88.82	20.13	5.437	55.09; matched energy radial

vel = 0.0527m/s;

```

230    13.15  0.0679  226.5  69.74  35.91  0.152  90.59  20.19  5.552  55.85; matched energy radial
vel = 0.0544m/s;
241    9.207  0.0744  260.7  67.35  35.98  0.142  112.6  20.84  6.967  64.67; matched energy radial
vel = 0.0841m/s;
242    8.842  0.075   264.0  67.09  35.99  0.142  114.9  20.89   7.11  65.52; acute zone;
258    2.93   0.0846  323.3  62.03  36.06  0.13   157.7  21.7   9.809  80.31; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.21 m
  conc dilutn width distnce
  (kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
6.84E-5 14617.9 1051.7 100.0 2576.2  0.0    0.0 1.00E-5 3.00E-4
4.74E-5 21073.0 1516.2 200.0 5353.9  0.0    0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 74; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.001.db; Diffuser table record 2: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.09	90.0	36.26	21.36	0.0	0.0	0.09	90.0	0.0003	25.38
0.914	0.0851	90.0	36.26	21.35	0.0	0.0	0.0851	90.0	0.0003	25.38
2.134	0.0786	90.0	36.26	21.34	0.0	0.0	0.0786	90.0	0.0003	25.38
3.048	0.0737	90.0	36.26	21.32	0.0	0.0	0.0737	90.0	0.0003	25.39
3.962	0.0688	90.0	36.26	21.31	0.0	0.0	0.0688	90.0	0.0003	25.39
4.877	0.0639	90.0	36.25	21.3	0.0	0.0	0.0639	90.0	0.0003	25.38
6.096	0.0573	90.0	36.25	21.29	0.0	0.0	0.0573	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0479	90.0	36.25	21.26	0.0	0.0	0.0479	90.0	0.0003	25.4
9.144	0.0424	90.0	36.25	21.25	0.0	0.0	0.0424	90.0	0.0003	25.4
10.06	0.0382	90.0	36.25	21.24	0.0	0.0	0.0382	90.0	0.0003	25.4
10.97	0.034	90.0	36.25	21.22	0.0	0.0	0.034	90.0	0.0003	25.41
11.89	0.0299	90.0	36.25	21.21	0.0	0.0	0.0299	90.0	0.0003	25.41
13.07	0.0245	90.0	36.25	21.2	0.0	0.0	0.0245	90.0	0.0003	25.41
14.02	0.012	90.0	36.25	21.19	0.0	0.0	0.012	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	22.0	1.0

Simulation:

Froude number: 15.48; effleunt density (sigma-T) 9.156; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.012	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	43.68	0.0211	41.17	26.6	33.32	0.358	7.146	6.527	0.125	3.452;
200	24.09	0.0501	170.5	67.98	35.84	0.151	50.9	20.22	3.396	42.61;
214	19.58	0.0575	204.2	68.05	35.94	0.138	67.16	21.53	4.638	52.9; acute zone;
237	12.03	0.0698	275.0	64.05	36.05	0.12	105.9	23.25	7.452	72.5; matched energy radial
vel = 0.0574m/s;										
238	11.69	0.0704	278.5	63.78	36.06	0.12	108.0	23.32	7.603	73.45; matched energy radial
vel = 0.0594m/s;										
242	10.35	0.0725	292.9	62.63	36.07	0.117	116.9	23.57	8.234	77.33; matched energy radial
vel = 0.0691m/s;										
260	4.278	0.0825	365.8	56.04	36.13	0.107	167.0	24.6	11.69	96.62; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.29 m										
conc dilutn width distnce time										
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s) (m0.67/s2)										
6.77E-5 14767.5 1135.8 100.0 2547.2 0.0 0.0 1.00E-5 3.00E-4										
4.68E-5 21351.4 1642.1 200.0 5325.0 0.0 0.0 1.00E-5 3.00E-4										
count: 2										

/ UM3.

Case 75; ambient file C:\Plumes\Proj\00\00_WINT_49ft_NONa.001.db; Diffuser table record 3: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.09	90.0	36.26	21.36	0.0	0.0	0.09	90.0	0.0003	25.38
0.914	0.0851	90.0	36.26	21.35	0.0	0.0	0.0851	90.0	0.0003	25.38
2.134	0.0786	90.0	36.26	21.34	0.0	0.0	0.0786	90.0	0.0003	25.38
3.048	0.0737	90.0	36.26	21.32	0.0	0.0	0.0737	90.0	0.0003	25.39
3.962	0.0688	90.0	36.26	21.31	0.0	0.0	0.0688	90.0	0.0003	25.39
4.877	0.0639	90.0	36.25	21.3	0.0	0.0	0.0639	90.0	0.0003	25.38
6.096	0.0573	90.0	36.25	21.29	0.0	0.0	0.0573	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0479	90.0	36.25	21.26	0.0	0.0	0.0479	90.0	0.0003	25.4
9.144	0.0424	90.0	36.25	21.25	0.0	0.0	0.0424	90.0	0.0003	25.4
10.06	0.0382	90.0	36.25	21.24	0.0	0.0	0.0382	90.0	0.0003	25.4
10.97	0.034	90.0	36.25	21.22	0.0	0.0	0.034	90.0	0.0003	25.41
11.89	0.0299	90.0	36.25	21.21	0.0	0.0	0.0299	90.0	0.0003	25.41
13.07	0.0245	90.0	36.25	21.2	0.0	0.0	0.0245	90.0	0.0003	25.41
14.02	0.012	90.0	36.25	21.19	0.0	0.0	0.012	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	22.0	1.0

Simulation:

Froude number: 28.18; effleunt density (sigma-T) 20.46; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.012	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.0	0.0198	42.51	18.87	35.39	0.339	7.214	6.764	0.13	3.614;
176	34.56	0.0357	161.5	44.91	36.06	0.107	32.48	21.86	2.581	39.08; acute zone;
200	28.45	0.0442	226.6	51.79	36.13	0.0873	52.24	26.57	4.983	64.92;
247	16.73	0.0623	415.0	43.08	36.2	0.0662	132.3	32.36	12.91	128.1; begin overlap;
248	16.49	0.0627	419.8	42.65	36.2	0.066	134.9	32.45	13.15	129.7; matched energy radial
vel = 0.035m/s;										
254	15.08	0.065	448.6	40.05	36.21	0.0651	151.8	32.97	14.67	139.7; matched energy radial
vel = 0.0403m/s;										
255	14.85	0.0654	453.5	39.62	36.21	0.065	154.9	33.05	14.95	141.4; end overlap;
271	10.85	0.0719	531.1	33.3	36.22	0.0652	212.6	34.37	20.28	173.4; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.49 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
6.15E-5	16251.1	1425.2	100.0	2439.9	0.0	0.0	1.00E-5	3.00E-4
4.21E-5	23764.3	2084.1	200.0	5217.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 76; ambient file C:\Plumes\Proj\00\00_WINT_49ft_NONa.001.db; Diffuser table record 4: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.09	90.0	36.26	21.36	0.0	0.0	0.09	90.0	0.0003	25.38
0.914	0.0851	90.0	36.26	21.35	0.0	0.0	0.0851	90.0	0.0003	25.38
2.134	0.0786	90.0	36.26	21.34	0.0	0.0	0.0786	90.0	0.0003	25.38
3.048	0.0737	90.0	36.26	21.32	0.0	0.0	0.0737	90.0	0.0003	25.39
3.962	0.0688	90.0	36.26	21.31	0.0	0.0	0.0688	90.0	0.0003	25.39
4.877	0.0639	90.0	36.25	21.3	0.0	0.0	0.0639	90.0	0.0003	25.38
6.096	0.0573	90.0	36.25	21.29	0.0	0.0	0.0573	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0479	90.0	36.25	21.26	0.0	0.0	0.0479	90.0	0.0003	25.4
9.144	0.0424	90.0	36.25	21.25	0.0	0.0	0.0424	90.0	0.0003	25.4

10.06	0.0382	90.0	36.25	21.24	0.0	0.0	0.0382	90.0	0.0003	25.4
10.97	0.034	90.0	36.25	21.22	0.0	0.0	0.034	90.0	0.0003	25.41
11.89	0.0299	90.0	36.25	21.21	0.0	0.0	0.0299	90.0	0.0003	25.41
13.07	0.0245	90.0	36.25	21.2	0.0	0.0	0.0245	90.0	0.0003	25.41
14.02	0.012	90.0	36.25	21.19	0.0	0.0	0.012	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	22.0	1.0

Simulation:

Froude number: -14.92; effleunt density (sigma-T) 43.51; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.012	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	41.44	0.0264	47.25	30.81	39.56	0.276	7.29	5.385	0.184	4.005;
137	40.38	0.028	71.6	9.607	38.6	0.172	10.26	8.113	0.457	8.262; begin overlap;
154	40.3	0.0281	78.15	-0.116	38.42	0.157	11.11	9.019	0.575	9.979; local maximum rise or fall;
200	40.88	0.0273	87.61	-26.28	38.08	0.148	13.16	11.34	0.93	14.94;
219	41.57	0.0264	91.22	-36.99	37.91	0.151	14.54	12.42	1.125	17.59; end overlap;
271	48.41	0.00362	109.8	-65.81	37.23	0.178	24.69	17.0	2.265	33.09; bottom hit;
300	59.19	-0.0394	147.0	-76.6	36.81	0.172	43.37	20.36	3.085	52.19;
322	66.52	-0.0689	197.4	-77.87	36.61	0.148	67.05	21.86	2.743	66.5; acute zone;
351	74.07	-0.0995	288.1	-66.24	36.46	0.12	115.5	23.03	0.809	84.78; begin overlap;
400	84.74	-0.142	440.9	-38.97	36.34	0.114	255.5	24.24	-7.557	121.8;
410	86.94	-0.151	475.2	-33.39	36.33	0.117	305.2	24.44	-10.59	131.7; end overlap;
455	98.86	-0.198	657.7	-14.81	36.28	0.149	741.9	25.31	-41.24	206.9; stream limit reached;
487	108.9	-0.238	819.4	-7.412	36.27	0.181	1398.1	25.87	-96.29	309.2; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 20.81 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.21E-5	82339.5	1694.1	100.0	1933.6	0.0	0.0	1.00E-5	3.00E-4
7.78E-6	1.28E+5	2644.2	200.0	4711.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 77; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.001.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
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m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.26	21.36	0.0	0.0	0.09	90.0	0.0003	25.38
0.914	0.0851	90.0	36.26	21.35	0.0	0.0	0.0851	90.0	0.0003	25.38
2.134	0.0786	90.0	36.26	21.34	0.0	0.0	0.0786	90.0	0.0003	25.38
3.048	0.0737	90.0	36.26	21.32	0.0	0.0	0.0737	90.0	0.0003	25.39
3.962	0.0688	90.0	36.26	21.31	0.0	0.0	0.0688	90.0	0.0003	25.39
4.877	0.0639	90.0	36.25	21.3	0.0	0.0	0.0639	90.0	0.0003	25.38
6.096	0.0573	90.0	36.25	21.29	0.0	0.0	0.0573	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0479	90.0	36.25	21.26	0.0	0.0	0.0479	90.0	0.0003	25.4
9.144	0.0424	90.0	36.25	21.25	0.0	0.0	0.0424	90.0	0.0003	25.4
10.06	0.0382	90.0	36.25	21.24	0.0	0.0	0.0382	90.0	0.0003	25.4
10.97	0.034	90.0	36.25	21.22	0.0	0.0	0.034	90.0	0.0003	25.41
11.89	0.0299	90.0	36.25	21.21	0.0	0.0	0.0299	90.0	0.0003	25.41
13.07	0.0245	90.0	36.25	21.2	0.0	0.0	0.0245	90.0	0.0003	25.41
14.02	0.012	90.0	36.25	21.19	0.0	0.0	0.012	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	22.0	1.0

Simulation:

Froude number: 25.49; effleunt density (sigma-T) 1.618; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.012	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	43.9	0.0202	42.07	19.83	31.94	0.681	7.099	6.938	0.0676	1.87;
170	33.38	0.0373	138.1	49.35	35.16	0.252	28.0	22.18	1.207	18.47; acute zone;
200	22.41	0.0527	205.5	62.36	35.65	0.206	50.7	29.1	2.956	36.27;
225	11.07	0.0712	283.4	66.56	35.88	0.178	83.16	33.64	5.554	56.22; matched energy radial
vel = 0.0949m/s;										
226	10.61	0.0719	287.2	66.58	35.89	0.177	84.82	33.79	5.683	57.08; matched energy radial
vel = 0.0997m/s;										
228	9.69	0.0734	294.7	66.57	35.91	0.175	88.25	34.09	5.947	58.82; matched energy radial
vel = 0.111m/s;										
243	2.867	0.0846	359.1	64.99	36.0	0.158	118.8	36.07	8.252	72.57; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.12 m										
conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
9.62E-5	10396.4	1103.3	100.0	2464.5	0.0	0.0	1.00E-5	3.00E-4		
6.59E-5	15162.4	1609.1	200.0	5242.3	0.0	0.0	1.00E-5	3.00E-4		
count: 2										

/ UM3.

Case 78; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.001.db; Diffuser table record 6: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.26	21.36	0.0	0.0	0.09	90.0	0.0003	25.38
0.914	0.0851	90.0	36.26	21.35	0.0	0.0	0.0851	90.0	0.0003	25.38
2.134	0.0786	90.0	36.26	21.34	0.0	0.0	0.0786	90.0	0.0003	25.38
3.048	0.0737	90.0	36.26	21.32	0.0	0.0	0.0737	90.0	0.0003	25.39
3.962	0.0688	90.0	36.26	21.31	0.0	0.0	0.0688	90.0	0.0003	25.39
4.877	0.0639	90.0	36.25	21.3	0.0	0.0	0.0639	90.0	0.0003	25.38
6.096	0.0573	90.0	36.25	21.29	0.0	0.0	0.0573	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0479	90.0	36.25	21.26	0.0	0.0	0.0479	90.0	0.0003	25.4
9.144	0.0424	90.0	36.25	21.25	0.0	0.0	0.0424	90.0	0.0003	25.4
10.06	0.0382	90.0	36.25	21.24	0.0	0.0	0.0382	90.0	0.0003	25.4
10.97	0.034	90.0	36.25	21.22	0.0	0.0	0.034	90.0	0.0003	25.41
11.89	0.0299	90.0	36.25	21.21	0.0	0.0	0.0299	90.0	0.0003	25.41
13.07	0.0245	90.0	36.25	21.2	0.0	0.0	0.0245	90.0	0.0003	25.41
14.02	0.012	90.0	36.25	21.19	0.0	0.0	0.012	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	22.0	1.0

Simulation:

Froude number: 30.96; effleunt density (sigma-T) 9.156; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.012	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	43.95	0.02	42.38	18.36	33.32	0.675	7.146	7.004	0.0683	1.891;
165	35.61	0.0342	137.1	40.6	35.44	0.235	25.84	22.16	1.116	17.73; acute zone;
200	23.73	0.0506	225.2	57.22	35.84	0.175	51.57	31.82	3.379	41.76;
225	12.78	0.0684	313.4	62.04	36.0	0.148	84.6	37.23	6.399	65.73; matched energy radial
vel = 0.0756m/s;										
226	12.34	0.0691	317.6	62.06	36.01	0.147	86.29	37.41	6.547	66.75; matched energy radial
vel = 0.0788m/s;										
229	11.04	0.0713	330.4	62.06	36.02	0.144	91.57	37.93	7.004	69.85; matched energy radial
vel = 0.0899m/s;										

246 3.84 0.0831 413.3 59.64 36.09 0.129 128.2 40.46 10.05 88.31; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.50 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 9.41E-5 10622.8 1202.1 100.0 2424.8 0.0 0.0 1.00E-5 3.00E-4
 6.43E-5 15559.6 1760.7 200.0 5202.6 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 79; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.001.db; Diffuser table record 7: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.26	21.36	0.0	0.0	0.09	90.0	0.0003	25.38
0.914	0.0851	90.0	36.26	21.35	0.0	0.0	0.0851	90.0	0.0003	25.38
2.134	0.0786	90.0	36.26	21.34	0.0	0.0	0.0786	90.0	0.0003	25.38
3.048	0.0737	90.0	36.26	21.32	0.0	0.0	0.0737	90.0	0.0003	25.39
3.962	0.0688	90.0	36.26	21.31	0.0	0.0	0.0688	90.0	0.0003	25.39
4.877	0.0639	90.0	36.25	21.3	0.0	0.0	0.0639	90.0	0.0003	25.38
6.096	0.0573	90.0	36.25	21.29	0.0	0.0	0.0573	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0479	90.0	36.25	21.26	0.0	0.0	0.0479	90.0	0.0003	25.4
9.144	0.0424	90.0	36.25	21.25	0.0	0.0	0.0424	90.0	0.0003	25.4
10.06	0.0382	90.0	36.25	21.24	0.0	0.0	0.0382	90.0	0.0003	25.4
10.97	0.034	90.0	36.25	21.22	0.0	0.0	0.034	90.0	0.0003	25.41
11.89	0.0299	90.0	36.25	21.21	0.0	0.0	0.0299	90.0	0.0003	25.41
13.07	0.0245	90.0	36.25	21.2	0.0	0.0	0.0245	90.0	0.0003	25.41
14.02	0.012	90.0	36.25	21.19	0.0	0.0	0.012	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	22.0	1.0

Simulation:

Froude number: 56.37; effleunt density (sigma-T) 20.46; effleunt velocity 4.804(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time
 (ft) (m/s) (in) (deg) (psu) (m/s) () (ft) (ft) (s)
 0 46.0 0.012 6.0 15.0 30.0 4.804 1.0 0.0 0.0 0.0;
 100 44.04 0.0197 42.84 16.04 35.39 0.667 7.214 7.103 0.0693 1.921;
 160 38.73 0.03 136.9 23.65 35.99 0.214 23.66 22.19 1.017 16.96; acute zone;

```

200    29.21    0.043    275.5    37.44    36.13    0.118    52.24    37.84    4.297    54.83;
230    18.92    0.0586    433.0    43.41    36.18    0.0864    94.46    48.08    9.721    102.5; matched energy radial
vel = 0.0412m/s;
231    18.6     0.0591    439.0    43.37    36.19    0.0857    96.27    48.34    9.934    104.2; matched energy radial
vel = 0.0421m/s;
239    16.24    0.063     487.2    42.6     36.19    0.0807    111.5    50.19    11.66    116.9; matched energy radial
vel = 0.0504m/s;
241    15.69    0.0639    499.2    42.29    36.2     0.0797    115.6    50.6     12.1    120.0; begin overlap;
259    10.62    0.0722    608.0    38.58    36.21    0.0741    158.7    54.07    16.92    151.3; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.44 m
  conc dilutn width distnce time
  (kg/kg)          (m)      (m)      (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
8.88E-5 11254.8 1513.5 100.0 2298.1 0.0 0.0 1.00E-5 3.00E-4
5.98E-5 16726.2 2249.3 200.0 5075.9 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 80; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.001.db; Diffuser table record 8: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.26	21.36	0.0	0.0	0.09	90.0	0.0003	25.38
0.914	0.0851	90.0	36.26	21.35	0.0	0.0	0.0851	90.0	0.0003	25.38
2.134	0.0786	90.0	36.26	21.34	0.0	0.0	0.0786	90.0	0.0003	25.38
3.048	0.0737	90.0	36.26	21.32	0.0	0.0	0.0737	90.0	0.0003	25.39
3.962	0.0688	90.0	36.26	21.31	0.0	0.0	0.0688	90.0	0.0003	25.39
4.877	0.0639	90.0	36.25	21.3	0.0	0.0	0.0639	90.0	0.0003	25.38
6.096	0.0573	90.0	36.25	21.29	0.0	0.0	0.0573	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0479	90.0	36.25	21.26	0.0	0.0	0.0479	90.0	0.0003	25.4
9.144	0.0424	90.0	36.25	21.25	0.0	0.0	0.0424	90.0	0.0003	25.4
10.06	0.0382	90.0	36.25	21.24	0.0	0.0	0.0382	90.0	0.0003	25.4
10.97	0.034	90.0	36.25	21.22	0.0	0.0	0.034	90.0	0.0003	25.41
11.89	0.0299	90.0	36.25	21.21	0.0	0.0	0.0299	90.0	0.0003	25.41
13.07	0.0245	90.0	36.25	21.2	0.0	0.0	0.0245	90.0	0.0003	25.41
14.02	0.012	90.0	36.25	21.19	0.0	0.0	0.012	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	22.0	1.0

Simulation:

Froude number: -29.84; effleunt density (sigma-T) 43.51; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.012	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	40.86	0.0272	44.4	41.98	39.53	0.631	7.355	5.343	0.0918	1.982;
170	34.19	0.0365	144.2	11.07	37.41	0.172	20.79	16.47	1.209	15.92; begin overlap;
190	33.99	0.0368	160.6	-0.336	37.3	0.153	22.94	18.55	1.58	19.96; local maximum rise or fall;
200	34.05	0.0368	166.3	-6.034	37.26	0.149	23.83	19.52	1.769	21.97;
225	34.65	0.036	176.6	-20.23	37.18	0.145	26.08	21.95	2.278	27.31; acute zone;
257	36.73	0.0332	189.1	-38.22	37.04	0.148	30.67	25.44	3.128	36.0; end overlap;
300	46.56	0.0116	221.6	-61.9	36.76	0.167	47.19	32.52	5.486	59.99;
302	47.55	0.00785	223.7	-63.01	36.75	0.169	48.54	32.99	5.674	62.01; bottom hit;
352	74.68	-0.102	393.9	-73.91	36.45	0.136	122.6	41.4	6.998	115.5; begin overlap;
400	88.09	-0.155	581.3	-50.02	36.35	0.119	233.3	43.9	0.637	153.1;
433	97.26	-0.192	697.8	-31.55	36.32	0.132	370.2	45.25	-10.27	188.2; stream limit reached;
443	100.0	-0.203	738.8	-26.0	36.31	0.14	439.1	45.62	-15.39	201.2; end overlap;
490	116.4	-0.268	992.3	-8.647	36.27	0.196	1110.1	47.47	-80.46	320.8; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 25.20 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.61E-5	62180.9	1950.9	100.0	1986.8	0.0	0.0	1.00E-5	3.00E-4
1.03E-5	96287.2	3021.0	200.0	4764.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 81; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.001.db; Diffuser table record 9: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.09	90.0	36.26	21.36	0.0	0.0	0.09	90.0	0.0003	25.38
0.914	0.0851	90.0	36.26	21.35	0.0	0.0	0.0851	90.0	0.0003	25.38
2.134	0.0786	90.0	36.26	21.34	0.0	0.0	0.0786	90.0	0.0003	25.38
3.048	0.0737	90.0	36.26	21.32	0.0	0.0	0.0737	90.0	0.0003	25.39
3.962	0.0688	90.0	36.26	21.31	0.0	0.0	0.0688	90.0	0.0003	25.39
4.877	0.0639	90.0	36.25	21.3	0.0	0.0	0.0639	90.0	0.0003	25.38
6.096	0.0573	90.0	36.25	21.29	0.0	0.0	0.0573	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0479	90.0	36.25	21.26	0.0	0.0	0.0479	90.0	0.0003	25.4
9.144	0.0424	90.0	36.25	21.25	0.0	0.0	0.0424	90.0	0.0003	25.4

10.06	0.0382	90.0	36.25	21.24	0.0	0.0	0.0382	90.0	0.0003	25.4
10.97	0.034	90.0	36.25	21.22	0.0	0.0	0.034	90.0	0.0003	25.41
11.89	0.0299	90.0	36.25	21.21	0.0	0.0	0.0299	90.0	0.0003	25.41
13.07	0.0245	90.0	36.25	21.2	0.0	0.0	0.0245	90.0	0.0003	25.41
14.02	0.012	90.0	36.25	21.19	0.0	0.0	0.012	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	22.0	1.0

Simulation:

Froude number: 38.24; effleunt density (sigma-T) 1.618; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.012	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	43.98	0.0199	42.37	17.24	31.94	1.006	7.099	7.093	0.0464	1.283;
160	37.14	0.0321	130.5	32.64	34.94	0.349	23.24	22.32	0.693	11.37; acute zone;
200	23.16	0.0514	239.6	53.35	35.65	0.229	51.17	36.64	2.8	34.23;
222	11.7	0.07	321.4	60.88	35.86	0.197	79.1	43.44	5.243	53.82; matched energy radial
vel = 0.113m/s;										
223	11.14	0.0709	325.6	61.1	35.87	0.196	80.68	43.71	5.383	54.81; matched energy radial
vel = 0.119m/s;										
224	10.59	0.0718	329.9	61.3	35.88	0.195	82.29	43.98	5.526	55.8; matched energy radial
vel = 0.127m/s;										
238	2.892	0.0844	397.3	62.62	35.97	0.177	108.6	47.33	7.789	70.1; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.09 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.10E-4	9014.7	1157.9	100.0	2371.7	0.0	0.0	1.00E-5	3.00E-4
7.53E-5	13283.0	1706.1	200.0	5149.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 82; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.001.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.09	90.0	36.26	21.36	0.0	0.0	0.09	90.0	0.0003	25.38
0.914	0.0851	90.0	36.26	21.35	0.0	0.0	0.0851	90.0	0.0003	25.38
2.134	0.0786	90.0	36.26	21.34	0.0	0.0	0.0786	90.0	0.0003	25.38

3.048	0.0737	90.0	36.26	21.32	0.0	0.0	0.0737	90.0	0.0003	25.39
3.962	0.0688	90.0	36.26	21.31	0.0	0.0	0.0688	90.0	0.0003	25.39
4.877	0.0639	90.0	36.25	21.3	0.0	0.0	0.0639	90.0	0.0003	25.38
6.096	0.0573	90.0	36.25	21.29	0.0	0.0	0.0573	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0479	90.0	36.25	21.26	0.0	0.0	0.0479	90.0	0.0003	25.4
9.144	0.0424	90.0	36.25	21.25	0.0	0.0	0.0424	90.0	0.0003	25.4
10.06	0.0382	90.0	36.25	21.24	0.0	0.0	0.0382	90.0	0.0003	25.4
10.97	0.034	90.0	36.25	21.22	0.0	0.0	0.034	90.0	0.0003	25.41
11.89	0.0299	90.0	36.25	21.21	0.0	0.0	0.0299	90.0	0.0003	25.41
13.07	0.0245	90.0	36.25	21.2	0.0	0.0	0.0245	90.0	0.0003	25.41
14.02	0.012	90.0	36.25	21.19	0.0	0.0	0.012	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	22.0	1.0

Simulation:

Froude number: 46.43; effleunt density (sigma-T) 9.156; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.012	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.01	0.0198	42.59	16.54	33.32	1.002	7.146	7.142	0.0467	1.292;
158	38.17	0.0308	129.3	27.2	35.32	0.343	22.5	22.13	0.659	11.01; acute zone;
200	24.94	0.0488	257.4	47.12	35.85	0.2	51.67	39.09	3.07	37.86;
223	13.46	0.0672	355.5	55.61	35.99	0.166	81.47	47.52	6.04	62.47; matched energy radial
vel = 0.0914m/s;										
224	12.93	0.068	360.3	55.85	36.0	0.165	83.1	47.84	6.203	63.65; matched energy radial
vel = 0.0957m/s;										
225	12.4	0.0689	365.3	56.07	36.0	0.164	84.76	48.16	6.369	64.84; matched energy radial
vel = 0.1m/s;										
240	4.614	0.0816	447.6	57.52	36.07	0.147	114.1	52.31	9.182	83.13; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.37 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.10E-4	9017.7	1242.1	100.0	2328.1	0.0	0.0	1.00E-5	3.00E-4
7.49E-5	13354.2	1839.4	200.0	5105.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 83; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.001.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.26	21.36	0.0	0.0	0.09	90.0	0.0003	25.38
0.914	0.0851	90.0	36.26	21.35	0.0	0.0	0.0851	90.0	0.0003	25.38
2.134	0.0786	90.0	36.26	21.34	0.0	0.0	0.0786	90.0	0.0003	25.38
3.048	0.0737	90.0	36.26	21.32	0.0	0.0	0.0737	90.0	0.0003	25.39
3.962	0.0688	90.0	36.26	21.31	0.0	0.0	0.0688	90.0	0.0003	25.39
4.877	0.0639	90.0	36.25	21.3	0.0	0.0	0.0639	90.0	0.0003	25.38
6.096	0.0573	90.0	36.25	21.29	0.0	0.0	0.0573	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0479	90.0	36.25	21.26	0.0	0.0	0.0479	90.0	0.0003	25.4
9.144	0.0424	90.0	36.25	21.25	0.0	0.0	0.0424	90.0	0.0003	25.4
10.06	0.0382	90.0	36.25	21.24	0.0	0.0	0.0382	90.0	0.0003	25.4
10.97	0.034	90.0	36.25	21.22	0.0	0.0	0.034	90.0	0.0003	25.41
11.89	0.0299	90.0	36.25	21.21	0.0	0.0	0.0299	90.0	0.0003	25.41
13.07	0.0245	90.0	36.25	21.2	0.0	0.0	0.0245	90.0	0.0003	25.41
14.02	0.012	90.0	36.25	21.19	0.0	0.0	0.012	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	22.0	1.0

Simulation:

Froude number: 84.55; effleunt density (sigma-T) 20.46; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.012	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.04	0.0197	42.9	15.47	35.39	0.997	7.214	7.216	0.0472	1.306;
156	39.52	0.029	128.8	18.79	35.97	0.336	21.86	22.09	0.63	10.74; acute zone;
200	29.98	0.042	293.3	28.83	36.13	0.155	52.24	43.7	3.561	45.04;
232	17.96	0.06	499.1	37.11	36.19	0.101	98.36	60.61	9.724	99.27; matched energy radial
233	17.58	0.0607	506.7	37.21	36.19	0.1	100.3	61.05	9.976	101.2; matched energy radial
235	16.83	0.0619	521.9	37.37	36.19	0.0982	104.1	61.88	10.48	105.0; matched energy radial
248	12.53	0.069	619.3	37.38	36.2	0.088	131.0	66.39	13.81	128.3; begin overlap;
253	11.0	0.0715	655.5	37.08	36.21	0.0854	142.3	67.87	15.19	137.3; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.65 m
 conc dilutn width distnce time

(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.04E-4 9607.6 1553.3 100.0 2188.9 0.0 0.0 1.00E-5 3.00E-4
 6.91E-5 14471.7 2339.7 200.0 4966.7 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 84; ambient file C:\Plumes\Proj\00\00_WINT_49ft_NONa.001.db; Diffuser table record 12: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.26	21.36	0.0	0.0	0.09	90.0	0.0003	25.38
0.914	0.0851	90.0	36.26	21.35	0.0	0.0	0.0851	90.0	0.0003	25.38
2.134	0.0786	90.0	36.26	21.34	0.0	0.0	0.0786	90.0	0.0003	25.38
3.048	0.0737	90.0	36.26	21.32	0.0	0.0	0.0737	90.0	0.0003	25.39
3.962	0.0688	90.0	36.26	21.31	0.0	0.0	0.0688	90.0	0.0003	25.39
4.877	0.0639	90.0	36.25	21.3	0.0	0.0	0.0639	90.0	0.0003	25.38
6.096	0.0573	90.0	36.25	21.29	0.0	0.0	0.0573	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0479	90.0	36.25	21.26	0.0	0.0	0.0479	90.0	0.0003	25.4
9.144	0.0424	90.0	36.25	21.25	0.0	0.0	0.0424	90.0	0.0003	25.4
10.06	0.0382	90.0	36.25	21.24	0.0	0.0	0.0382	90.0	0.0003	25.4
10.97	0.034	90.0	36.25	21.22	0.0	0.0	0.034	90.0	0.0003	25.41
11.89	0.0299	90.0	36.25	21.21	0.0	0.0	0.0299	90.0	0.0003	25.41
13.07	0.0245	90.0	36.25	21.2	0.0	0.0	0.0245	90.0	0.0003	25.41
14.02	0.012	90.0	36.25	21.19	0.0	0.0	0.012	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	22.0	1.0

Simulation:

Froude number: -44.76; effleunt density (sigma-T) 43.51; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.012	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	40.72	0.0273	43.83	43.69	39.53	0.973	7.355	5.371	0.0617	1.328;
176	28.84	0.0439	192.5	19.75	37.1	0.197	28.43	22.0	1.642	18.85; acute zone;
188	28.2	0.0448	215.7	12.97	37.02	0.173	31.33	24.17	2.051	22.67; begin overlap;
200	27.88	0.0453	233.9	6.165	36.97	0.159	33.65	26.08	2.454	26.33;

211	27.79	0.0454	246.3	-0.087	36.93	0.151	35.36	27.7	2.824	29.64; local maximum rise or fall;
280	32.1	0.0397	292.7	-38.95	36.75	0.146	48.2	38.13	5.784	54.82; end overlap;
300	36.55	0.0337	312.8	-49.93	36.67	0.152	57.18	42.26	7.336	67.65;
321	46.58	0.0125	344.3	-61.36	36.58	0.163	74.05	48.29	10.07	90.91; bottom hit;
361	76.06	-0.107	526.6	-74.48	36.41	0.138	149.0	58.51	13.42	150.9; begin overlap;
400	88.95	-0.159	715.1	-58.91	36.35	0.12	235.9	61.55	9.516	184.4;
404	90.08	-0.164	733.5	-56.45	36.35	0.119	247.2	61.79	8.826	187.8; stream limit reached;
463	108.9	-0.238	953.5	-22.87	36.3	0.152	526.9	65.29	-15.97	261.6; end overlap;
489	118.9	-0.278	1096.0	-11.35	36.28	0.191	875.3	66.9	-51.81	327.2; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 27.84 m

conc	dilutn	width	distnce	time						
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
2.07E-5	48311.2	2123.3	100.0	2061.4	0.0	0.0	1.00E-5	3.00E-4		
1.35E-5	74017.0	3253.2	200.0	4839.1	0.0	0.0	1.00E-5	3.00E-4		

count: 2

/ UM3.

Case 85; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.002.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.26	21.36	0.0	0.0	0.18	90.0	0.0003	25.38
0.914	0.17	90.0	36.26	21.35	0.0	0.0	0.17	90.0	0.0003	25.38
2.134	0.157	90.0	36.26	21.34	0.0	0.0	0.157	90.0	0.0003	25.38
3.048	0.147	90.0	36.26	21.32	0.0	0.0	0.147	90.0	0.0003	25.39
3.962	0.138	90.0	36.26	21.31	0.0	0.0	0.138	90.0	0.0003	25.39
4.877	0.128	90.0	36.25	21.3	0.0	0.0	0.128	90.0	0.0003	25.38
6.096	0.115	90.0	36.25	21.29	0.0	0.0	0.115	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.0958	90.0	36.25	21.26	0.0	0.0	0.0958	90.0	0.0003	25.4
9.144	0.0847	90.0	36.25	21.25	0.0	0.0	0.0847	90.0	0.0003	25.4
10.06	0.0764	90.0	36.25	21.24	0.0	0.0	0.0764	90.0	0.0003	25.4
10.97	0.0681	90.0	36.25	21.22	0.0	0.0	0.0681	90.0	0.0003	25.41
11.89	0.0598	90.0	36.25	21.21	0.0	0.0	0.0598	90.0	0.0003	25.41
13.07	0.049	90.0	36.25	21.2	0.0	0.0	0.049	90.0	0.0003	25.41
14.02	0.024	90.0	36.25	21.19	0.0	0.0	0.024	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)

6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 1.0 5.0 22.0 1.0

Simulation:

Froude number: 12.75; effleunt density (sigma-T) 1.618; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.024	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	43.72	0.0418	40.41	29.73	31.94	0.37	7.099	5.952	0.22	3.081;
200	29.08	0.0867	164.8	61.41	35.65	0.162	51.15	15.7	4.466	29.89;
254	17.57	0.122	312.9	45.08	36.05	0.131	149.0	18.29	12.34	60.53; acute zone;
255	17.35	0.123	316.2	44.66	36.05	0.131	152.0	18.33	12.56	61.26; matched energy radial
vel = 0.0498m/s;										
272	13.49	0.135	376.0	37.62	36.11	0.13	212.8	18.89	17.0	75.1; matched energy radial
vel = 0.0756m/s;										
273	13.25	0.136	379.6	37.22	36.11	0.13	217.0	18.92	17.31	76.01; matched energy radial
vel = 0.0778m/s;										
275	12.78	0.137	386.9	36.44	36.12	0.131	225.8	18.99	17.94	77.86; matched energy radial
vel = 0.0823m/s;										
289	9.321	0.149	439.9	31.21	36.15	0.133	297.9	19.4	23.14	92.33; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.17 m										
	conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
	4.05E-5	24657.2	1278.0	100.0	2522.1	0.0	0.0	1.00E-5	3.00E-4	
	2.80E-5	35742.6	1852.5	200.0	5299.9	0.0	0.0	1.00E-5	3.00E-4	
count: 2										

/ UM3.

Case 86; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.002.db; Diffuser table record 2: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.18	90.0	36.26	21.36	0.0	0.0	0.18	90.0	0.0003	25.38
0.914	0.17	90.0	36.26	21.35	0.0	0.0	0.17	90.0	0.0003	25.38
2.134	0.157	90.0	36.26	21.34	0.0	0.0	0.157	90.0	0.0003	25.38
3.048	0.147	90.0	36.26	21.32	0.0	0.0	0.147	90.0	0.0003	25.39
3.962	0.138	90.0	36.26	21.31	0.0	0.0	0.138	90.0	0.0003	25.39
4.877	0.128	90.0	36.25	21.3	0.0	0.0	0.128	90.0	0.0003	25.38
6.096	0.115	90.0	36.25	21.29	0.0	0.0	0.115	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.0958	90.0	36.25	21.26	0.0	0.0	0.0958	90.0	0.0003	25.4
9.144	0.0847	90.0	36.25	21.25	0.0	0.0	0.0847	90.0	0.0003	25.4
10.06	0.0764	90.0	36.25	21.24	0.0	0.0	0.0764	90.0	0.0003	25.4

10.97	0.0681	90.0	36.25	21.22	0.0	0.0	0.0681	90.0	0.0003	25.41
11.89	0.0598	90.0	36.25	21.21	0.0	0.0	0.0598	90.0	0.0003	25.41
13.07	0.049	90.0	36.25	21.2	0.0	0.0	0.049	90.0	0.0003	25.41
14.02	0.024	90.0	36.25	21.19	0.0	0.0	0.024	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	22.0	1.0

Simulation:

Froude number: 15.48; effleunt density (sigma-T) 9.156; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.024	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	43.88	0.0406	41.27	25.67	33.32	0.357	7.146	6.089	0.226	3.172;
200	30.39	0.0831	180.8	56.14	35.85	0.136	51.67	17.18	5.013	34.1;
239	22.93	0.104	287.5	45.51	36.06	0.117	111.8	19.48	10.49	57.66; acute zone;
240	22.74	0.105	290.7	45.13	36.07	0.116	114.1	19.53	10.69	58.39; matched energy radial
vel = 0.031m/s;										
274	15.62	0.128	408.4	31.81	36.16	0.116	223.6	20.95	19.75	89.22; matched energy radial
vel = 0.0632m/s;										
275	15.4	0.129	412.1	31.44	36.16	0.116	228.1	20.99	20.12	90.36; matched energy radial
vel = 0.0649m/s;										
281	14.0	0.133	434.6	29.34	36.17	0.118	256.9	21.21	22.5	97.56; matched energy radial
vel = 0.0762m/s;										
292	11.29	0.142	477.1	25.92	36.19	0.122	319.4	21.6	27.73	112.6; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.12 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.92E-5	25513.9	1337.7	100.0	2480.2	0.0	0.0	1.00E-5	3.00E-4
2.69E-5	37147.8	1947.7	200.0	5258.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 87; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.002.db; Diffuser table record 3: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.18	90.0	36.26	21.36	0.0	0.0	0.18	90.0	0.0003	25.38
0.914	0.17	90.0	36.26	21.35	0.0	0.0	0.17	90.0	0.0003	25.38

2.134	0.157	90.0	36.26	21.34	0.0	0.0	0.157	90.0	0.0003	25.38
3.048	0.147	90.0	36.26	21.32	0.0	0.0	0.147	90.0	0.0003	25.39
3.962	0.138	90.0	36.26	21.31	0.0	0.0	0.138	90.0	0.0003	25.39
4.877	0.128	90.0	36.25	21.3	0.0	0.0	0.128	90.0	0.0003	25.38
6.096	0.115	90.0	36.25	21.29	0.0	0.0	0.115	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.0958	90.0	36.25	21.26	0.0	0.0	0.0958	90.0	0.0003	25.4
9.144	0.0847	90.0	36.25	21.25	0.0	0.0	0.0847	90.0	0.0003	25.4
10.06	0.0764	90.0	36.25	21.24	0.0	0.0	0.0764	90.0	0.0003	25.4
10.97	0.0681	90.0	36.25	21.22	0.0	0.0	0.0681	90.0	0.0003	25.41
11.89	0.0598	90.0	36.25	21.21	0.0	0.0	0.0598	90.0	0.0003	25.41
13.07	0.049	90.0	36.25	21.2	0.0	0.0	0.049	90.0	0.0003	25.41
14.02	0.024	90.0	36.25	21.19	0.0	0.0	0.024	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	22.0	1.0

Simulation:

Froude number: 28.18; effleunt density (sigma-T) 20.46; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.024	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.15	0.0385	42.5	18.5	35.39	0.339	7.214	6.291	0.234	3.308;
200	34.99	0.0706	223.9	36.76	36.13	0.0883	51.48	20.64	6.293	45.08;
204	34.49	0.0719	235.3	36.34	36.14	0.0864	55.63	21.05	6.822	47.99; acute zone;
300	18.45	0.119	583.2	12.69	36.23	0.095	372.0	28.54	46.57	204.8;
301	18.23	0.12	587.7	12.46	36.23	0.0954	379.4	28.61	47.57	208.1; matched energy radial
vel = 0.0641m/s;										
304	17.56	0.122	601.2	11.76	36.23	0.0968	402.7	28.81	50.74	218.4; matched energy radial
vel = 0.069m/s;										
307	16.87	0.124	615.0	11.08	36.24	0.0982	427.3	29.0	54.15	229.2; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.62 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.34E-5	29923.9	1511.7	100.0	2257.7	0.0	0.0	1.00E-5	3.00E-4
2.24E-5	44688.1	2257.6	200.0	5035.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 88; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.002.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.26	21.36	0.0	0.0	0.18	90.0	0.0003	25.38
0.914	0.17	90.0	36.26	21.35	0.0	0.0	0.17	90.0	0.0003	25.38
2.134	0.157	90.0	36.26	21.34	0.0	0.0	0.157	90.0	0.0003	25.38
3.048	0.147	90.0	36.26	21.32	0.0	0.0	0.147	90.0	0.0003	25.39
3.962	0.138	90.0	36.26	21.31	0.0	0.0	0.138	90.0	0.0003	25.39
4.877	0.128	90.0	36.25	21.3	0.0	0.0	0.128	90.0	0.0003	25.38
6.096	0.115	90.0	36.25	21.29	0.0	0.0	0.115	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.0958	90.0	36.25	21.26	0.0	0.0	0.0958	90.0	0.0003	25.4
9.144	0.0847	90.0	36.25	21.25	0.0	0.0	0.0847	90.0	0.0003	25.4
10.06	0.0764	90.0	36.25	21.24	0.0	0.0	0.0764	90.0	0.0003	25.4
10.97	0.0681	90.0	36.25	21.22	0.0	0.0	0.0681	90.0	0.0003	25.41
11.89	0.0598	90.0	36.25	21.21	0.0	0.0	0.0598	90.0	0.0003	25.41
13.07	0.049	90.0	36.25	21.2	0.0	0.0	0.049	90.0	0.0003	25.41
14.02	0.024	90.0	36.25	21.19	0.0	0.0	0.024	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	22.0	1.0

Simulation:

Froude number: -14.92; effleunt density (sigma-T) 43.51; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.024	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	41.79	0.0518	46.95	32.55	39.53	0.281	7.354	4.856	0.316	3.533;
132	40.72	0.0549	73.47	14.88	38.49	0.171	10.78	7.155	0.787	7.229; begin overlap;
159	40.55	0.0555	86.24	-0.332	38.18	0.145	12.49	8.503	1.175	10.02; local maximum rise or fall;
200	40.99	0.0543	95.96	-23.45	37.9	0.138	14.64	10.41	1.835	14.58;
230	42.13	0.0512	103.5	-40.0	37.63	0.142	17.55	12.04	2.524	19.19; end overlap;
273	48.05	0.00988	124.5	-63.14	37.09	0.162	28.83	15.68	4.719	33.97; bottom hit;
300	57.27	-0.0639	160.9	-75.77	36.76	0.157	47.47	18.51	6.498	51.97;
320	61.87	-0.102	207.0	-77.2	36.61	0.135	67.48	19.49	6.452	61.83; begin overlap;
400	73.55	-0.195	357.2	-35.13	36.37	0.132	193.7	21.27	-1.286	97.72;
414	75.64	-0.212	384.7	-27.32	36.35	0.144	244.1	21.5	-4.798	106.8; acute zone, end overlap;
500	93.39	-0.354	659.5	-5.046	36.27	0.267	1335.8	22.84	-106.3	252.8;

506 94.8 -0.365 686.9 -4.42 36.27 0.277 1504.4 22.92 -123.6 272.1; stream limit reached;
 516 97.13 -0.383 735.9 -3.466 36.26 0.294 1833.8 23.04 -158.0 308.8; trap level;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 18.69 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.04E-5 96127.5 1354.2 100.0 1425.8 0.0 0.0 1.00E-5 3.00E-4
 6.06E-6 1.65E+5 2325.0 200.0 4203.5 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 89; ambient file C:\Plumes\Proj\00\00_WINT_49ft_NONa.002.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.26	21.36	0.0	0.0	0.18	90.0	0.0003	25.38
0.914	0.17	90.0	36.26	21.35	0.0	0.0	0.17	90.0	0.0003	25.38
2.134	0.157	90.0	36.26	21.34	0.0	0.0	0.157	90.0	0.0003	25.38
3.048	0.147	90.0	36.26	21.32	0.0	0.0	0.147	90.0	0.0003	25.39
3.962	0.138	90.0	36.26	21.31	0.0	0.0	0.138	90.0	0.0003	25.39
4.877	0.128	90.0	36.25	21.3	0.0	0.0	0.128	90.0	0.0003	25.38
6.096	0.115	90.0	36.25	21.29	0.0	0.0	0.115	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.0958	90.0	36.25	21.26	0.0	0.0	0.0958	90.0	0.0003	25.4
9.144	0.0847	90.0	36.25	21.25	0.0	0.0	0.0847	90.0	0.0003	25.4
10.06	0.0764	90.0	36.25	21.24	0.0	0.0	0.0764	90.0	0.0003	25.4
10.97	0.0681	90.0	36.25	21.22	0.0	0.0	0.0681	90.0	0.0003	25.41
11.89	0.0598	90.0	36.25	21.21	0.0	0.0	0.0598	90.0	0.0003	25.41
13.07	0.049	90.0	36.25	21.2	0.0	0.0	0.049	90.0	0.0003	25.41
14.02	0.024	90.0	36.25	21.19	0.0	0.0	0.024	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	22.0	1.0

Simulation:

Froude number: 25.49; effleunt density (sigma-T) 1.618; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.024	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	43.99	0.0397	42.08	19.59	31.94	0.68	7.099	6.667	0.128	1.781;

180 33.12 0.0754 164.2 49.8 35.37 0.22 34.52 21.94 2.777 20.46; acute zone;
 200 27.73 0.0903 215.2 55.24 35.65 0.19 51.29 25.49 4.707 30.57;
 269 9.199 0.149 492.0 38.97 36.1 0.144 201.1 32.47 18.25 77.91; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.50 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 6.31E-5 15838.5 1360.6 100.0 2462.4 0.0 0.0 1.00E-5 3.00E-4
 4.33E-5 23104.4 1984.8 200.0 5240.2 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 90; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.002.db; Diffuser table record 6: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.26	21.36	0.0	0.0	0.18	90.0	0.0003	25.38
0.914	0.17	90.0	36.26	21.35	0.0	0.0	0.17	90.0	0.0003	25.38
2.134	0.157	90.0	36.26	21.34	0.0	0.0	0.157	90.0	0.0003	25.38
3.048	0.147	90.0	36.26	21.32	0.0	0.0	0.147	90.0	0.0003	25.39
3.962	0.138	90.0	36.26	21.31	0.0	0.0	0.138	90.0	0.0003	25.39
4.877	0.128	90.0	36.25	21.3	0.0	0.0	0.128	90.0	0.0003	25.38
6.096	0.115	90.0	36.25	21.29	0.0	0.0	0.115	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.0958	90.0	36.25	21.26	0.0	0.0	0.0958	90.0	0.0003	25.4
9.144	0.0847	90.0	36.25	21.25	0.0	0.0	0.0847	90.0	0.0003	25.4
10.06	0.0764	90.0	36.25	21.24	0.0	0.0	0.0764	90.0	0.0003	25.4
10.97	0.0681	90.0	36.25	21.22	0.0	0.0	0.0681	90.0	0.0003	25.41
11.89	0.0598	90.0	36.25	21.21	0.0	0.0	0.0598	90.0	0.0003	25.41
13.07	0.049	90.0	36.25	21.2	0.0	0.0	0.049	90.0	0.0003	25.41
14.02	0.024	90.0	36.25	21.19	0.0	0.0	0.024	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	22.0	1.0

Simulation:

Froude number: 30.96; effleunt density (sigma-T) 9.156; effleunt velocity 4.804(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time
 Step (ft) (m/s) (in) (deg) (psu) (m/s) () (ft) (ft) (s)
 0 46.0 0.024 6.0 15.0 15.0 4.804 1.0 0.0 0.0 0.0;

```

100    44.04  0.0393  42.39  18.19  33.32  0.675  7.146   6.73   0.129   1.8;
175    35.42  0.0691  162.5  41.28  35.59  0.204  31.5    21.99  2.558  19.62; acute zone;
200    29.36  0.0858  232.7  49.09  35.85  0.164  51.67   27.23  5.152  33.87;
273    11.39  0.142   546.2  32.42  36.16  0.127  219.3   35.65  21.68  93.53; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.87 m
  conc dilutn width distnce time
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
6.04E-5 16552.2 1447.5 100.0 2424.5 0.0 0.0 1.00E-5 3.00E-4
4.12E-5 24245.4 2120.3 200.0 5202.3 0.0 0.0 1.00E-5 3.00E-4
count: 2

```

/ UM3.

Case 91; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.002.db; Diffuser table record 7: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.26	21.36	0.0	0.0	0.18	90.0	0.0003	25.38
0.914	0.17	90.0	36.26	21.35	0.0	0.0	0.17	90.0	0.0003	25.38
2.134	0.157	90.0	36.26	21.34	0.0	0.0	0.157	90.0	0.0003	25.38
3.048	0.147	90.0	36.26	21.32	0.0	0.0	0.147	90.0	0.0003	25.39
3.962	0.138	90.0	36.26	21.31	0.0	0.0	0.138	90.0	0.0003	25.39
4.877	0.128	90.0	36.25	21.3	0.0	0.0	0.128	90.0	0.0003	25.38
6.096	0.115	90.0	36.25	21.29	0.0	0.0	0.115	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.0958	90.0	36.25	21.26	0.0	0.0	0.0958	90.0	0.0003	25.4
9.144	0.0847	90.0	36.25	21.25	0.0	0.0	0.0847	90.0	0.0003	25.4
10.06	0.0764	90.0	36.25	21.24	0.0	0.0	0.0764	90.0	0.0003	25.4
10.97	0.0681	90.0	36.25	21.22	0.0	0.0	0.0681	90.0	0.0003	25.41
11.89	0.0598	90.0	36.25	21.21	0.0	0.0	0.0598	90.0	0.0003	25.41
13.07	0.049	90.0	36.25	21.2	0.0	0.0	0.049	90.0	0.0003	25.41
14.02	0.024	90.0	36.25	21.19	0.0	0.0	0.024	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	22.0	1.0

Simulation:

```

Froude number: 56.37; effleunt density (sigma-T) 20.46; effleunt velocity 4.804(m/s);
  Depth  Amb-cur  P-dia  V-angle  Eff-sal  P-speed  Dilutn  x-posn  y-posn  Time
Step    (ft)    (m/s)  (in)   (deg)   (psu)   (m/s)   ( )    (ft)   (ft)   (s)

```

```

0      46.0    0.024    6.0     15.0    30.0    4.804    1.0     0.0     0.0     0.0;
100    44.12   0.0387   42.83   15.98   35.39   0.667    7.214   6.822   0.131   1.828;
169    38.71   0.0602   161.1   23.78   36.03   0.185    28.27   22.04   2.301   18.63; acute zone;
200    33.84   0.0736   271.8   29.93   36.13   0.121    52.1    30.71   6.048   41.03;
221    30.57   0.0827   359.3   30.48   36.17   0.101    76.05   34.99   9.534   58.96; begin overlap;
255    25.01   0.0981   518.1   25.0    36.21   0.091    141.3   40.54   18.3    97.34; end overlap;
279    20.38   0.113    647.2   18.42   36.22   0.0941   227.3   44.04   29.6    139.4; matched energy radial
vel = 0.0622m/s;
280    20.17   0.113    652.7   18.15   36.22   0.0944   231.8   44.19   30.22   141.6; matched energy radial
vel = 0.0636m/s;
281    19.96   0.114    658.2   17.88   36.22   0.0947   236.4   44.33   30.86   143.8; matched energy radial
vel = 0.065m/s;
289    18.22   0.12     703.0   15.76   36.23   0.0973   277.0   45.46   36.58   163.1; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.86 m
  conc dilutn width distnce time
  (kg/kg)      (m)      (m)      (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
5.36E-5 18660.5 1662.2 100.0 2283.8 0.0 0.0 1.00E-5 3.00E-4
3.60E-5 27779.3 2474.5 200.0 5061.6 0.0 0.0 1.00E-5 3.00E-4
count: 2

```

/ UM3.

Case 92; ambient file C:\Plumes\Proj\00\00_WINT_49ft_NONa.002.db; Diffuser table record 8: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.26	21.36	0.0	0.0	0.18	90.0	0.0003	25.38
0.914	0.17	90.0	36.26	21.35	0.0	0.0	0.17	90.0	0.0003	25.38
2.134	0.157	90.0	36.26	21.34	0.0	0.0	0.157	90.0	0.0003	25.38
3.048	0.147	90.0	36.26	21.32	0.0	0.0	0.147	90.0	0.0003	25.39
3.962	0.138	90.0	36.26	21.31	0.0	0.0	0.138	90.0	0.0003	25.39
4.877	0.128	90.0	36.25	21.3	0.0	0.0	0.128	90.0	0.0003	25.38
6.096	0.115	90.0	36.25	21.29	0.0	0.0	0.115	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.0958	90.0	36.25	21.26	0.0	0.0	0.0958	90.0	0.0003	25.4
9.144	0.0847	90.0	36.25	21.25	0.0	0.0	0.0847	90.0	0.0003	25.4
10.06	0.0764	90.0	36.25	21.24	0.0	0.0	0.0764	90.0	0.0003	25.4
10.97	0.0681	90.0	36.25	21.22	0.0	0.0	0.0681	90.0	0.0003	25.41
11.89	0.0598	90.0	36.25	21.21	0.0	0.0	0.0598	90.0	0.0003	25.41
13.07	0.049	90.0	36.25	21.2	0.0	0.0	0.049	90.0	0.0003	25.41
14.02	0.024	90.0	36.25	21.19	0.0	0.0	0.024	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	22.0	1.0

Simulation:

Froude number: -29.84; effleunt density (sigma-T) 43.51; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.024	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	41.13	0.0536	44.31	42.14	39.53	0.634	7.355	5.048	0.168	1.846;
165	35.09	0.0705	146.5	17.04	37.35	0.174	21.9	14.2	1.996	13.43; begin overlap;
196	34.61	0.072	179.2	-0.0715	37.16	0.142	26.52	17.19	3.182	19.87; local maximum rise or fall;
200	34.62	0.0719	182.0	-2.309	37.14	0.14	26.99	17.54	3.342	20.72;
242	35.76	0.0689	203.5	-25.7	36.99	0.136	32.43	21.39	5.282	30.78; acute zone;
266	37.76	0.0635	220.3	-38.55	36.87	0.138	38.73	24.02	6.91	38.98; end overlap;
300	45.74	0.0294	266.2	-56.04	36.65	0.147	59.79	29.3	11.41	61.82;
302	46.6	0.0227	268.4	-57.15	36.64	0.148	61.35	29.7	11.81	63.93; bottom hit;
334	61.37	-0.0969	350.4	-73.56	36.49	0.138	98.71	34.67	16.45	96.75; begin overlap;
400	75.44	-0.21	505.4	-57.92	36.38	0.122	180.1	37.78	13.69	133.4;
465	87.69	-0.308	590.9	-22.38	36.32	0.179	356.9	39.76	-2.167	176.5; end overlap;
500	96.32	-0.377	692.6	-9.243	36.28	0.257	707.8	40.88	-38.1	227.2;
503	97.1	-0.383	704.1	-8.61	36.28	0.264	751.1	40.97	-43.12	233.1; stream limit reached;
535	105.5	-0.451	856.1	-3.949	36.27	0.336	1415.5	41.89	-128.4	318.8; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 21.74 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.32E-5	75543.7	1603.7	100.0	1634.6	0.0	0.0	1.00E-5	3.00E-4
8.06E-6	1.24E+5	2634.8	200.0	4412.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 93; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.002.db; Diffuser table record 9: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.18	90.0	36.26	21.36	0.0	0.0	0.18	90.0	0.0003	25.38
0.914	0.17	90.0	36.26	21.35	0.0	0.0	0.17	90.0	0.0003	25.38
2.134	0.157	90.0	36.26	21.34	0.0	0.0	0.157	90.0	0.0003	25.38
3.048	0.147	90.0	36.26	21.32	0.0	0.0	0.147	90.0	0.0003	25.39
3.962	0.138	90.0	36.26	21.31	0.0	0.0	0.138	90.0	0.0003	25.39

4.877	0.128	90.0	36.25	21.3	0.0	0.0	0.128	90.0	0.0003	25.38
6.096	0.115	90.0	36.25	21.29	0.0	0.0	0.115	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.0958	90.0	36.25	21.26	0.0	0.0	0.0958	90.0	0.0003	25.4
9.144	0.0847	90.0	36.25	21.25	0.0	0.0	0.0847	90.0	0.0003	25.4
10.06	0.0764	90.0	36.25	21.24	0.0	0.0	0.0764	90.0	0.0003	25.4
10.97	0.0681	90.0	36.25	21.22	0.0	0.0	0.0681	90.0	0.0003	25.41
11.89	0.0598	90.0	36.25	21.21	0.0	0.0	0.0598	90.0	0.0003	25.41
13.07	0.049	90.0	36.25	21.2	0.0	0.0	0.049	90.0	0.0003	25.41
14.02	0.024	90.0	36.25	21.19	0.0	0.0	0.024	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	22.0	1.0

Simulation:

Froude number: 38.24; effleunt density (sigma-T) 1.618; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.024	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.04	0.0393	42.38	17.16	31.94	1.006	7.099	6.899	0.0891	1.24;
166	37.1	0.0645	145.6	33.23	35.08	0.316	26.17	22.18	1.503	12.08; acute zone;
200	27.94	0.0896	246.4	47.7	35.65	0.217	51.29	32.17	4.5	28.85;
221	20.99	0.11	329.2	51.53	35.86	0.185	77.73	37.03	7.596	42.69; matched energy radial
vel = 0.0604m/s;										
222	20.67	0.111	333.6	51.54	35.86	0.183	79.28	37.22	7.765	43.37; matched energy radial
vel = 0.0617m/s;										
237	15.98	0.127	406.0	49.94	35.96	0.167	106.7	39.77	10.58	53.94; matched energy radial
vel = 0.0884m/s;										
238	15.68	0.128	411.2	49.72	35.97	0.166	108.8	39.91	10.79	54.67; matched energy radial
vel = 0.0908m/s;										
240	15.07	0.13	421.6	49.25	35.98	0.164	113.2	40.21	11.22	56.14; matched energy radial
vel = 0.0958m/s;										
261	8.849	0.15	538.3	42.24	36.08	0.153	171.6	42.88	16.64	72.96; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.67 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
7.74E-5	12920.4	1422.8	100.0	2388.4	0.0	0.0	1.00E-5	3.00E-4
5.26E-5	19001.9	2092.5	200.0	5166.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 94; ambient file C:\Plumes\Proj\00\00_WINT_49ft_NONa.002.db; Diffuser table record 10: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spdx	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.26	21.36	0.0	0.0	0.18	90.0	0.0003	25.38
0.914	0.17	90.0	36.26	21.35	0.0	0.0	0.17	90.0	0.0003	25.38
2.134	0.157	90.0	36.26	21.34	0.0	0.0	0.157	90.0	0.0003	25.38
3.048	0.147	90.0	36.26	21.32	0.0	0.0	0.147	90.0	0.0003	25.39
3.962	0.138	90.0	36.26	21.31	0.0	0.0	0.138	90.0	0.0003	25.39
4.877	0.128	90.0	36.25	21.3	0.0	0.0	0.128	90.0	0.0003	25.38
6.096	0.115	90.0	36.25	21.29	0.0	0.0	0.115	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.0958	90.0	36.25	21.26	0.0	0.0	0.0958	90.0	0.0003	25.4
9.144	0.0847	90.0	36.25	21.25	0.0	0.0	0.0847	90.0	0.0003	25.4
10.06	0.0764	90.0	36.25	21.24	0.0	0.0	0.0764	90.0	0.0003	25.4
10.97	0.0681	90.0	36.25	21.22	0.0	0.0	0.0681	90.0	0.0003	25.41
11.89	0.0598	90.0	36.25	21.21	0.0	0.0	0.0598	90.0	0.0003	25.41
13.07	0.049	90.0	36.25	21.2	0.0	0.0	0.049	90.0	0.0003	25.41
14.02	0.024	90.0	36.25	21.19	0.0	0.0	0.024	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	22.0	1.0

Simulation:

Froude number: 46.43; effleunt density (sigma-T) 9.156; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.024	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.06	0.0392	42.59	16.49	33.32	1.002	7.146	6.946	0.0898	1.249;
164	38.11	0.0618	144.5	27.7	35.42	0.31	25.34	22.09	1.439	11.77; acute zone;
200	29.59	0.085	261.9	41.23	35.85	0.193	51.67	33.78	4.808	31.13;
223	22.67	0.105	364.1	45.4	35.99	0.158	81.47	39.82	8.627	48.68; matched energy radial
224	22.37	0.106	369.1	45.4	36.0	0.157	83.1	40.04	8.819	49.48; matched energy radial
240	17.98	0.12	452.5	43.52	36.07	0.143	113.2	42.98	12.13	62.27; matched energy radial
241	17.72	0.121	457.9	43.3	36.07	0.142	115.3	43.14	12.35	63.07; begin overlap, matched

energy radial vel = 0.0764m/s;

245 16.69 0.125 479.3 42.35 36.08 0.14 124.2 43.75 13.28 66.38; matched energy radial
 vel = 0.0836m/s;
 265 11.3 0.142 592.1 36.09 36.14 0.134 181.9 46.59 19.26 85.51; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.04 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 7.60E-5 13160.7 1504.2 100.0 2350.9 0.0 0.0 1.00E-5 3.00E-4
 5.14E-5 19438.0 2221.6 200.0 5128.7 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 95; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.002.db; Diffuser table record 11: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.18	90.0	36.26	21.36	0.0	0.0	0.18	90.0	0.0003	25.38
0.914	0.17	90.0	36.26	21.35	0.0	0.0	0.17	90.0	0.0003	25.38
2.134	0.157	90.0	36.26	21.34	0.0	0.0	0.157	90.0	0.0003	25.38
3.048	0.147	90.0	36.26	21.32	0.0	0.0	0.147	90.0	0.0003	25.39
3.962	0.138	90.0	36.26	21.31	0.0	0.0	0.138	90.0	0.0003	25.39
4.877	0.128	90.0	36.25	21.3	0.0	0.0	0.128	90.0	0.0003	25.38
6.096	0.115	90.0	36.25	21.29	0.0	0.0	0.115	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.0958	90.0	36.25	21.26	0.0	0.0	0.0958	90.0	0.0003	25.4
9.144	0.0847	90.0	36.25	21.25	0.0	0.0	0.0847	90.0	0.0003	25.4
10.06	0.0764	90.0	36.25	21.24	0.0	0.0	0.0764	90.0	0.0003	25.4
10.97	0.0681	90.0	36.25	21.22	0.0	0.0	0.0681	90.0	0.0003	25.41
11.89	0.0598	90.0	36.25	21.21	0.0	0.0	0.0598	90.0	0.0003	25.41
13.07	0.049	90.0	36.25	21.2	0.0	0.0	0.049	90.0	0.0003	25.41
14.02	0.024	90.0	36.25	21.19	0.0	0.0	0.024	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	22.0	1.0

Simulation:

Froude number: 84.55; effleunt density (sigma-T) 20.46; effleunt velocity 7.205(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time
 Step (ft) (m/s) (in) (deg) (psu) (m/s) () (ft) (ft) (s)
 0 46.0 0.024 6.0 15.0 30.0 7.205 1.0 0.0 0.0 0.0;

```

100      44.1  0.0389   42.9   15.45   35.39   0.997   7.214   7.017   0.0908   1.262;
162      39.47 0.0581   144.3   18.9    36.0    0.301   24.62   22.16   1.386   11.57; acute zone;
200      33.44 0.0746   290.1   24.87   36.13   0.159   52.24   36.58   5.326   35.27;
230      27.74 0.0905   453.0   27.05   36.18   0.114   91.01   46.26   11.33   64.84; begin overlap;
264      21.59 0.109    646.5   22.83   36.21   0.1     161.3   54.04   21.67   106.9; matched energy radial
vel = 0.0624m/s;
265      21.39 0.11     652.6   22.6    36.21   0.0999  164.2   54.26   22.08   108.4; matched energy radial
vel = 0.0635m/s;
268      20.8  0.111    671.4   21.89   36.21   0.0998  173.5   54.89   23.39   113.2; matched energy radial
vel = 0.0671m/s;
277      18.99 0.117    730.8   19.47   36.22   0.1     206.3   56.77   27.85   129.0; end overlap;
279      18.58 0.119    744.4   18.91   36.22   0.101   214.6   57.18   28.97   132.8; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 18.91 m
  conc dilutn width distnce time
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
7.13E-5 14032.8 1708.4 100.0 2235.1 0.0 0.0 1.00E-5 3.00E-4
4.76E-5 21014.8 2558.5 200.0 5012.9 0.0 0.0 1.00E-5 3.00E-4
count: 2

```

/ UM3.

Case 96; ambient file C:\Plumes\Proj\00\00_WINT_49ft_NONa.002.db; Diffuser table record 12: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.18	90.0	36.26	21.36	0.0	0.0	0.18	90.0	0.0003	25.38
0.914	0.17	90.0	36.26	21.35	0.0	0.0	0.17	90.0	0.0003	25.38
2.134	0.157	90.0	36.26	21.34	0.0	0.0	0.157	90.0	0.0003	25.38
3.048	0.147	90.0	36.26	21.32	0.0	0.0	0.147	90.0	0.0003	25.39
3.962	0.138	90.0	36.26	21.31	0.0	0.0	0.138	90.0	0.0003	25.39
4.877	0.128	90.0	36.25	21.3	0.0	0.0	0.128	90.0	0.0003	25.38
6.096	0.115	90.0	36.25	21.29	0.0	0.0	0.115	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.0958	90.0	36.25	21.26	0.0	0.0	0.0958	90.0	0.0003	25.4
9.144	0.0847	90.0	36.25	21.25	0.0	0.0	0.0847	90.0	0.0003	25.4
10.06	0.0764	90.0	36.25	21.24	0.0	0.0	0.0764	90.0	0.0003	25.4
10.97	0.0681	90.0	36.25	21.22	0.0	0.0	0.0681	90.0	0.0003	25.41
11.89	0.0598	90.0	36.25	21.21	0.0	0.0	0.0598	90.0	0.0003	25.41
13.07	0.049	90.0	36.25	21.2	0.0	0.0	0.049	90.0	0.0003	25.41
14.02	0.024	90.0	36.25	21.19	0.0	0.0	0.024	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia P-elev V-angle H-angle Ports AcuteMZ ChrcnMZ P-depth Ttl-flo Eff-sal Temp Polutnt
 (in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 45.0 0.0 1.0 22.0 200.0 46.0 3.0 60.0 22.0 1.0

Simulation:

Froude number: -44.76; effleunt density (sigma-T) 43.51; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	0.024	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0	
100	40.92	0.0542	43.79	43.72	39.53	0.974	7.355	5.167	0.116	1.265	
184	29.77	0.0852	217.3	18.96	36.98	0.179	33.04	20.52	3.275	18.64	begin overlap;
192	29.38	0.0863	234.8	14.8	36.93	0.166	35.52	21.71	3.792	21.04	acute zone;
200	29.1	0.0871	249.6	10.53	36.89	0.156	37.67	22.84	4.329	23.49	
220	28.85	0.0879	278.0	-0.379	36.82	0.141	42.2	25.52	5.75	29.81	local maximum rise or fall;
286	33.27	0.0761	349.2	-35.75	36.63	0.136	63.73	35.0	12.52	58.35	end overlap;
300	36.51	0.0675	381.6	-42.51	36.57	0.136	76.32	37.76	15.3	69.76	
317	43.84	0.046	431.9	-50.96	36.49	0.139	99.63	42.02	20.54	91.9	bottom hit;
344	60.7	-0.0906	520.3	-66.08	36.42	0.135	141.8	48.22	28.95	134.4	begin overlap;
400	76.53	-0.219	709.7	-70.87	36.36	0.113	218.5	52.26	29.72	176.7	
497	97.62	-0.387	784.5	-20.0	36.3	0.194	455.0	56.36	5.921	249.5	end overlap;
500	98.4	-0.393	787.5	-18.37	36.3	0.203	477.4	56.49	3.655	253.1	
502	98.95	-0.398	789.7	-17.32	36.3	0.208	493.9	56.59	1.91	255.8	stream limit reached;
537	109.4	-0.481	894.4	-5.91	36.27	0.323	986.1	58.28	-60.61	326.7	trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 22.72 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.72E-5	58306.4	1856.3	100.0	2065.8	0.0	0.0	1.00E-5	3.00E-4
1.12E-5	89275.6	2842.2	200.0	4843.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 97; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.003.db; Diffuser table record 1: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.27	90.0	36.26	21.36	0.0	0.0	0.27	90.0	0.0003	25.38
0.914	0.255	90.0	36.26	21.35	0.0	0.0	0.255	90.0	0.0003	25.38
2.134	0.236	90.0	36.26	21.34	0.0	0.0	0.236	90.0	0.0003	25.38
3.048	0.221	90.0	36.26	21.32	0.0	0.0	0.221	90.0	0.0003	25.39
3.962	0.206	90.0	36.26	21.31	0.0	0.0	0.206	90.0	0.0003	25.39
4.877	0.192	90.0	36.25	21.3	0.0	0.0	0.192	90.0	0.0003	25.38

6.096	0.172	90.0	36.25	21.29	0.0	0.0	0.172	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.144	90.0	36.25	21.26	0.0	0.0	0.144	90.0	0.0003	25.4
9.144	0.127	90.0	36.25	21.25	0.0	0.0	0.127	90.0	0.0003	25.4
10.06	0.115	90.0	36.25	21.24	0.0	0.0	0.115	90.0	0.0003	25.4
10.97	0.102	90.0	36.25	21.22	0.0	0.0	0.102	90.0	0.0003	25.41
11.89	0.0896	90.0	36.25	21.21	0.0	0.0	0.0896	90.0	0.0003	25.41
13.07	0.0735	90.0	36.25	21.2	0.0	0.0	0.0735	90.0	0.0003	25.41
14.02	0.036	90.0	36.25	21.19	0.0	0.0	0.036	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	22.0	1.0

Simulation:

Froude number: 12.75; effleunt density (sigma-T) 1.618; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.036	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	43.9	0.0606	40.52	28.69	31.94	0.368	7.099	5.602	0.302	2.864;
200	33.06	0.114	168.4	50.95	35.65	0.156	51.29	13.83	5.281	25.05;
257	24.16	0.151	309.4	33.02	36.06	0.143	158.5	16.12	15.09	53.49; acute zone;
258	23.98	0.152	312.3	32.7	36.06	0.144	161.7	16.15	15.37	54.2; matched energy radial
vel = 0.0389m/s;										
300	15.46	0.193	448.2	20.25	36.17	0.161	371.4	17.35	33.3	94.33;
305	14.31	0.199	466.3	19.04	36.18	0.164	410.1	17.47	36.54	100.8; matched energy radial
vel = 0.111m/s;										
312	12.64	0.207	492.3	17.52	36.19	0.169	471.1	17.63	41.62	110.6; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.51 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.73E-5	36591.9	1342.4	100.0	2395.1	0.0	0.0	1.00E-5	3.00E-4
1.86E-5	53774.9	1972.8	200.0	5172.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 98; ambient file C:\Plumes\Proj\00\00_WINT_49ft_NONa.003.db; Diffuser table record 2: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
------------	----------------	----------------	----------------	--------------	------------------	--------------	-----------------	----------------	---------------------	--------------------

0.0	0.27	90.0	36.26	21.36	0.0	0.0	0.27	90.0	0.0003	25.38
0.914	0.255	90.0	36.26	21.35	0.0	0.0	0.255	90.0	0.0003	25.38
2.134	0.236	90.0	36.26	21.34	0.0	0.0	0.236	90.0	0.0003	25.38
3.048	0.221	90.0	36.26	21.32	0.0	0.0	0.221	90.0	0.0003	25.39
3.962	0.206	90.0	36.26	21.31	0.0	0.0	0.206	90.0	0.0003	25.39
4.877	0.192	90.0	36.25	21.3	0.0	0.0	0.192	90.0	0.0003	25.38
6.096	0.172	90.0	36.25	21.29	0.0	0.0	0.172	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.144	90.0	36.25	21.26	0.0	0.0	0.144	90.0	0.0003	25.4
9.144	0.127	90.0	36.25	21.25	0.0	0.0	0.127	90.0	0.0003	25.4
10.06	0.115	90.0	36.25	21.24	0.0	0.0	0.115	90.0	0.0003	25.4
10.97	0.102	90.0	36.25	21.22	0.0	0.0	0.102	90.0	0.0003	25.41
11.89	0.0896	90.0	36.25	21.21	0.0	0.0	0.0896	90.0	0.0003	25.41
13.07	0.0735	90.0	36.25	21.2	0.0	0.0	0.0735	90.0	0.0003	25.41
14.02	0.036	90.0	36.25	21.19	0.0	0.0	0.036	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	22.0	1.0

Simulation:

Froude number: 15.48; effleunt density (sigma-T) 9.156; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.036	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	44.04	0.059	41.32	24.85	33.32	0.356	7.146	5.72	0.31	2.942;
200	34.41	0.108	182.1	44.77	35.85	0.134	51.67	14.85	5.76	27.83;
247	27.91	0.135	298.1	31.23	36.09	0.128	131.0	17.12	13.88	53.29; acute zone;
300	17.81	0.182	467.8	17.23	36.19	0.148	374.2	19.03	37.81	111.2;
311	15.31	0.194	509.1	14.87	36.21	0.156	465.3	19.35	46.57	129.4; matched energy radial

vel = 0.108m/s;

316 14.13 0.2 528.7 13.93 36.21 0.16 513.7 19.49 51.24 138.7; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.43 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.61E-5	38300.3	1383.6	100.0	2313.6	0.0	0.0	1.00E-5	3.00E-4
1.76E-5	56815.1	2052.5	200.0	5091.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 99; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.003.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.27	90.0	36.26	21.36	0.0	0.0	0.27	90.0	0.0003	25.38
0.914	0.255	90.0	36.26	21.35	0.0	0.0	0.255	90.0	0.0003	25.38
2.134	0.236	90.0	36.26	21.34	0.0	0.0	0.236	90.0	0.0003	25.38
3.048	0.221	90.0	36.26	21.32	0.0	0.0	0.221	90.0	0.0003	25.39
3.962	0.206	90.0	36.26	21.31	0.0	0.0	0.206	90.0	0.0003	25.39
4.877	0.192	90.0	36.25	21.3	0.0	0.0	0.192	90.0	0.0003	25.38
6.096	0.172	90.0	36.25	21.29	0.0	0.0	0.172	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.144	90.0	36.25	21.26	0.0	0.0	0.144	90.0	0.0003	25.4
9.144	0.127	90.0	36.25	21.25	0.0	0.0	0.127	90.0	0.0003	25.4
10.06	0.115	90.0	36.25	21.24	0.0	0.0	0.115	90.0	0.0003	25.4
10.97	0.102	90.0	36.25	21.22	0.0	0.0	0.102	90.0	0.0003	25.41
11.89	0.0896	90.0	36.25	21.21	0.0	0.0	0.0896	90.0	0.0003	25.41
13.07	0.0735	90.0	36.25	21.2	0.0	0.0	0.0735	90.0	0.0003	25.41
14.02	0.036	90.0	36.25	21.19	0.0	0.0	0.036	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	22.0	1.0

Simulation:

Froude number: 28.18; effleunt density (sigma-T) 20.46; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.036	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.28	0.0562	42.46	18.16	35.39	0.34	7.214	5.896	0.32	3.058;
190	39.02	0.0893	183.5	27.54	36.1	0.104	40.54	16.0	5.257	28.14; begin overlap;
199	38.37	0.092	203.7	26.64	36.12	0.0996	47.96	16.73	6.301	32.46; end overlap;
200	38.29	0.0923	206.0	26.51	36.12	0.0992	48.89	16.82	6.43	32.98;
227	35.94	0.102	274.5	22.05	36.18	0.0957	83.38	18.94	11.22	51.19; acute zone;
300	25.39	0.145	509.7	9.999	36.23	0.118	353.9	23.97	52.23	173.4;
323	20.78	0.167	606.5	6.356	36.24	0.132	558.0	25.33	85.14	254.2; trap level;
332	18.95	0.176	647.9	4.863	36.24	0.138	666.9	25.85	104.1	297.1; matched energy radial
vel = 0.0984m/s;										
334	18.55	0.178	657.4	4.539	36.24	0.14	693.8	25.97	109.1	308.0; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.70 m										
conc	dilutn	width	distnce	time						
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		

2.34E-5 42765.5 1422.4 100.0 1828.5 0.0 0.0 1.00E-5 3.00E-4
 1.47E-5 67873.5 2257.4 200.0 4606.3 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 100; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.003.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.27	90.0	36.26	21.36	0.0	0.0	0.27	90.0	0.0003	25.38
0.914	0.255	90.0	36.26	21.35	0.0	0.0	0.255	90.0	0.0003	25.38
2.134	0.236	90.0	36.26	21.34	0.0	0.0	0.236	90.0	0.0003	25.38
3.048	0.221	90.0	36.26	21.32	0.0	0.0	0.221	90.0	0.0003	25.39
3.962	0.206	90.0	36.26	21.31	0.0	0.0	0.206	90.0	0.0003	25.39
4.877	0.192	90.0	36.25	21.3	0.0	0.0	0.192	90.0	0.0003	25.38
6.096	0.172	90.0	36.25	21.29	0.0	0.0	0.172	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.144	90.0	36.25	21.26	0.0	0.0	0.144	90.0	0.0003	25.4
9.144	0.127	90.0	36.25	21.25	0.0	0.0	0.127	90.0	0.0003	25.4
10.06	0.115	90.0	36.25	21.24	0.0	0.0	0.115	90.0	0.0003	25.4
10.97	0.102	90.0	36.25	21.22	0.0	0.0	0.102	90.0	0.0003	25.41
11.89	0.0896	90.0	36.25	21.21	0.0	0.0	0.0896	90.0	0.0003	25.41
13.07	0.0735	90.0	36.25	21.2	0.0	0.0	0.0735	90.0	0.0003	25.41
14.02	0.036	90.0	36.25	21.19	0.0	0.0	0.036	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	22.0	1.0

Simulation:

Froude number: -14.92; effleunt density (sigma-T) 43.51; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.036	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	42.1	0.0765	46.36	33.77	39.53	0.289	7.355	4.419	0.411	3.138;
129	41.08	0.0809	73.01	19.08	38.43	0.177	11.06	6.338	1.0	6.26; begin overlap;
165	40.77	0.0823	93.01	-0.439	37.97	0.14	14.01	8.029	1.793	10.04; local maximum rise or fall;
200	41.11	0.081	103.2	-19.8	37.72	0.133	16.41	9.585	2.711	14.22;
233	42.34	0.076	116.4	-37.05	37.39	0.135	21.15	11.32	3.995	19.87; end overlap;

272	47.59	0.0198	147.0	-56.71	36.92	0.146	36.17	14.37	7.482	35.36; bottom hit;
300	55.55	-0.0763	181.8	-72.2	36.69	0.142	54.93	16.7	10.48	53.21;
308	56.93	-0.0934	199.0	-75.66	36.64	0.134	61.67	17.01	10.72	56.38; begin overlap;
400	68.36	-0.231	313.7	-44.09	36.41	0.13	146.8	18.93	6.657	88.44;
436	72.63	-0.282	346.2	-23.99	36.35	0.168	230.9	19.44	0.0538	104.8; end overlap;
458	75.89	-0.321	382.3	-14.15	36.32	0.211	354.0	19.77	-10.09	121.8; acute zone;
500	82.92	-0.405	487.4	-5.986	36.28	0.298	813.3	20.33	-56.21	176.4;
551	92.16	-0.516	691.1	-2.06	36.26	0.406	2233.0	20.87	-211.5	308.3; trap level, stream

limit reached;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.56 m

conc	dilutn	width	distnce	time						
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
1.01E-5	99023.5	1075.8	100.0	978.5	0.0	0.0	1.00E-5	3.00E-4		
5.16E-6	1.94E+5	2107.7	200.0	3756.2	0.0	0.0	1.00E-5	3.00E-4		

count: 2

/ UM3.

Case 101; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.003.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.27	90.0	36.26	21.36	0.0	0.0	0.27	90.0	0.0003	25.38
0.914	0.255	90.0	36.26	21.35	0.0	0.0	0.255	90.0	0.0003	25.38
2.134	0.236	90.0	36.26	21.34	0.0	0.0	0.236	90.0	0.0003	25.38
3.048	0.221	90.0	36.26	21.32	0.0	0.0	0.221	90.0	0.0003	25.39
3.962	0.206	90.0	36.26	21.31	0.0	0.0	0.206	90.0	0.0003	25.39
4.877	0.192	90.0	36.25	21.3	0.0	0.0	0.192	90.0	0.0003	25.38
6.096	0.172	90.0	36.25	21.29	0.0	0.0	0.172	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.144	90.0	36.25	21.26	0.0	0.0	0.144	90.0	0.0003	25.4
9.144	0.127	90.0	36.25	21.25	0.0	0.0	0.127	90.0	0.0003	25.4
10.06	0.115	90.0	36.25	21.24	0.0	0.0	0.115	90.0	0.0003	25.4
10.97	0.102	90.0	36.25	21.22	0.0	0.0	0.102	90.0	0.0003	25.41
11.89	0.0896	90.0	36.25	21.21	0.0	0.0	0.0896	90.0	0.0003	25.41
13.07	0.0735	90.0	36.25	21.2	0.0	0.0	0.0735	90.0	0.0003	25.41
14.02	0.036	90.0	36.25	21.19	0.0	0.0	0.036	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	22.0	1.0

Simulation:

Froude number: 25.49; effleunt density (sigma-T) 1.618; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.036	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	44.07	0.0586	42.09	19.37	31.94	0.68	7.099	6.424	0.182	1.702;
193	32.93	0.114	199.3	46.99	35.57	0.193	44.65	21.62	4.822	22.79; acute zone;
200	31.62	0.12	218.8	47.31	35.65	0.184	51.29	22.51	5.638	25.67;
289	13.27	0.204	553.3	23.15	36.15	0.169	298.7	29.62	30.98	87.17; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.05 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
4.46E-5	22412.0	1457.1	100.0	2414.9	0.0	0.0	1.00E-5	3.00E-4
3.04E-5	32863.6	2136.6	200.0	5192.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 102; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.003.db; Diffuser table record 6: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.27	90.0	36.26	21.36	0.0	0.0	0.27	90.0	0.0003	25.38
0.914	0.255	90.0	36.26	21.35	0.0	0.0	0.255	90.0	0.0003	25.38
2.134	0.236	90.0	36.26	21.34	0.0	0.0	0.236	90.0	0.0003	25.38
3.048	0.221	90.0	36.26	21.32	0.0	0.0	0.221	90.0	0.0003	25.39
3.962	0.206	90.0	36.26	21.31	0.0	0.0	0.206	90.0	0.0003	25.39
4.877	0.192	90.0	36.25	21.3	0.0	0.0	0.192	90.0	0.0003	25.38
6.096	0.172	90.0	36.25	21.29	0.0	0.0	0.172	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.144	90.0	36.25	21.26	0.0	0.0	0.144	90.0	0.0003	25.4
9.144	0.127	90.0	36.25	21.25	0.0	0.0	0.127	90.0	0.0003	25.4
10.06	0.115	90.0	36.25	21.24	0.0	0.0	0.115	90.0	0.0003	25.4
10.97	0.102	90.0	36.25	21.22	0.0	0.0	0.102	90.0	0.0003	25.41
11.89	0.0896	90.0	36.25	21.21	0.0	0.0	0.0896	90.0	0.0003	25.41
13.07	0.0735	90.0	36.25	21.2	0.0	0.0	0.0735	90.0	0.0003	25.41
14.02	0.036	90.0	36.25	21.19	0.0	0.0	0.036	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
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6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 2.0 15.0 22.0 1.0

Simulation:

Froude number: 30.96; effleunt density (sigma-T) 9.156; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.036	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	44.12	0.0581	42.38	18.03	33.32	0.675	7.146	6.483	0.183	1.72;
186	35.39	0.104	192.2	39.51	35.72	0.182	39.16	21.6	4.336	21.48; acute zone;
200	33.08	0.114	233.7	40.88	35.85	0.162	51.66	23.71	6.042	27.85;
292	15.43	0.193	594.9	18.93	36.18	0.157	319.3	32.22	36.6	105.1; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.11 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
4.32E-5	23143.3	1513.3	100.0	2365.0	0.0	0.0	1.00E-5	3.00E-4
2.93E-5	34127.0	2231.5	200.0	5142.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 103; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.003.db; Diffuser table record 7: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.27	90.0	36.26	21.36	0.0	0.0	0.27	90.0	0.0003	25.38
0.914	0.255	90.0	36.26	21.35	0.0	0.0	0.255	90.0	0.0003	25.38
2.134	0.236	90.0	36.26	21.34	0.0	0.0	0.236	90.0	0.0003	25.38
3.048	0.221	90.0	36.26	21.32	0.0	0.0	0.221	90.0	0.0003	25.39
3.962	0.206	90.0	36.26	21.31	0.0	0.0	0.206	90.0	0.0003	25.39
4.877	0.192	90.0	36.25	21.3	0.0	0.0	0.192	90.0	0.0003	25.38
6.096	0.172	90.0	36.25	21.29	0.0	0.0	0.172	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.144	90.0	36.25	21.26	0.0	0.0	0.144	90.0	0.0003	25.4
9.144	0.127	90.0	36.25	21.25	0.0	0.0	0.127	90.0	0.0003	25.4
10.06	0.115	90.0	36.25	21.24	0.0	0.0	0.115	90.0	0.0003	25.4
10.97	0.102	90.0	36.25	21.22	0.0	0.0	0.102	90.0	0.0003	25.41
11.89	0.0896	90.0	36.25	21.21	0.0	0.0	0.0896	90.0	0.0003	25.41
13.07	0.0735	90.0	36.25	21.2	0.0	0.0	0.0735	90.0	0.0003	25.41
14.02	0.036	90.0	36.25	21.19	0.0	0.0	0.036	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia P-elev V-angle H-angle Ports AcuteMZ ChrncMZ P-depth Ttl-flo Eff-sal Temp Polutnt

(in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 2.0 30.0 22.0 1.0

Simulation:

Froude number: 56.37; effleunt density (sigma-T) 20.46; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.036	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.2	0.0573	42.82	15.92	35.39	0.667	7.214	6.57	0.186	1.746;
179	38.73	0.0904	189.1	22.83	36.07	0.164	34.47	21.77	3.902	20.46; acute zone;
200	36.63	0.0991	257.7	23.93	36.13	0.131	50.85	25.73	6.616	31.5;
207	35.97	0.102	281.2	23.76	36.14	0.125	57.41	26.8	7.629	35.36; begin overlap;
236	33.0	0.114	387.7	20.69	36.19	0.111	96.56	30.94	13.5	55.93; end overlap;
300	22.75	0.158	684.5	9.885	36.23	0.127	342.9	39.62	53.97	167.5;
307	21.25	0.165	722.1	8.735	36.23	0.131	393.9	40.52	63.16	189.5; matched energy radial
vel = 0.0929m/s;										
310	20.59	0.168	738.6	8.238	36.24	0.133	418.0	40.9	67.6	199.9; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 18.76 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.76E-5	26613.4	1650.7	100.0	2108.8	0.0	0.0	1.00E-5	3.00E-4
2.47E-5	40510.5	2512.7	200.0	4886.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 104; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.003.db; Diffuser table record 8: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.27	90.0	36.26	21.36	0.0	0.0	0.27	90.0	0.0003	25.38
0.914	0.255	90.0	36.26	21.35	0.0	0.0	0.255	90.0	0.0003	25.38
2.134	0.236	90.0	36.26	21.34	0.0	0.0	0.236	90.0	0.0003	25.38
3.048	0.221	90.0	36.26	21.32	0.0	0.0	0.221	90.0	0.0003	25.39
3.962	0.206	90.0	36.26	21.31	0.0	0.0	0.206	90.0	0.0003	25.39
4.877	0.192	90.0	36.25	21.3	0.0	0.0	0.192	90.0	0.0003	25.38
6.096	0.172	90.0	36.25	21.29	0.0	0.0	0.172	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.144	90.0	36.25	21.26	0.0	0.0	0.144	90.0	0.0003	25.4
9.144	0.127	90.0	36.25	21.25	0.0	0.0	0.127	90.0	0.0003	25.4
10.06	0.115	90.0	36.25	21.24	0.0	0.0	0.115	90.0	0.0003	25.4
10.97	0.102	90.0	36.25	21.22	0.0	0.0	0.102	90.0	0.0003	25.41
11.89	0.0896	90.0	36.25	21.21	0.0	0.0	0.0896	90.0	0.0003	25.41

13.07	0.0735	90.0	36.25	21.2	0.0	0.0	0.0735	90.0	0.0003	25.41
14.02	0.036	90.0	36.25	21.19	0.0	0.0	0.036	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	22.0	1.0

Simulation:

Froude number: -29.84; effleunt density (sigma-T) 43.51; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.036	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	41.36	0.0795	44.21	42.21	39.53	0.637	7.355	4.795	0.234	1.731;
163	35.97	0.102	143.3	20.99	37.33	0.186	22.37	12.39	2.453	11.29; begin overlap;
200	35.17	0.106	189.5	2.036	37.05	0.144	30.01	15.68	4.562	18.97;
204	35.16	0.106	193.2	-0.0978	37.04	0.142	30.73	16.02	4.823	19.89; local maximum rise or fall;
250	36.53	0.1	231.4	-24.22	36.83	0.135	41.78	20.22	8.69	33.11; acute zone;
261	37.47	0.0964	247.6	-29.25	36.76	0.134	47.63	21.4	10.1	37.8; end overlap;
293	44.45	0.0593	329.7	-43.11	36.54	0.133	83.86	25.99	17.95	64.07; bottom hit;
300	47.27	0.0256	344.1	-47.06	36.51	0.136	92.48	27.14	20.49	73.07;
323	56.53	-0.0872	395.8	-60.34	36.45	0.13	118.6	29.97	26.76	98.71; begin overlap;
400	70.74	-0.259	559.9	-69.46	36.37	0.107	194.2	32.98	28.36	139.4;
491	84.67	-0.426	565.5	-20.07	36.32	0.202	368.7	35.13	11.84	187.9; end overlap;
500	86.61	-0.449	569.5	-15.23	36.31	0.234	431.7	35.38	5.555	197.0;
548	96.95	-0.573	690.7	-4.023	36.27	0.408	1116.9	36.6	-77.31	273.2; stream limit reached;
566	100.5	-0.616	773.6	-2.537	36.27	0.464	1595.2	36.98	-142.5	318.5; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 19.65 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.17E-5	85221.8	1450.7	100.0	1531.0	0.0	0.0	1.00E-5	3.00E-4
7.00E-6	1.43E+5	2433.6	200.0	4308.8	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 105; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.003.db; Diffuser table record 9: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.27	90.0	36.26	21.36	0.0	0.0	0.27	90.0	0.0003	25.38

0.914	0.255	90.0	36.26	21.35	0.0	0.0	0.255	90.0	0.0003	25.38
2.134	0.236	90.0	36.26	21.34	0.0	0.0	0.236	90.0	0.0003	25.38
3.048	0.221	90.0	36.26	21.32	0.0	0.0	0.221	90.0	0.0003	25.39
3.962	0.206	90.0	36.26	21.31	0.0	0.0	0.206	90.0	0.0003	25.39
4.877	0.192	90.0	36.25	21.3	0.0	0.0	0.192	90.0	0.0003	25.38
6.096	0.172	90.0	36.25	21.29	0.0	0.0	0.172	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.144	90.0	36.25	21.26	0.0	0.0	0.144	90.0	0.0003	25.4
9.144	0.127	90.0	36.25	21.25	0.0	0.0	0.127	90.0	0.0003	25.4
10.06	0.115	90.0	36.25	21.24	0.0	0.0	0.115	90.0	0.0003	25.4
10.97	0.102	90.0	36.25	21.22	0.0	0.0	0.102	90.0	0.0003	25.41
11.89	0.0896	90.0	36.25	21.21	0.0	0.0	0.0896	90.0	0.0003	25.41
13.07	0.0735	90.0	36.25	21.2	0.0	0.0	0.0735	90.0	0.0003	25.41
14.02	0.036	90.0	36.25	21.19	0.0	0.0	0.036	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	22.0	1.0

Simulation:

Froude number: 38.24; effleunt density (sigma-T) 1.618; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.036	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.1	0.0583	42.37	17.08	31.94	1.006	7.099	6.719	0.129	1.2;
172	37.12	0.0968	161.5	33.28	35.21	0.289	29.47	21.93	2.421	12.73; acute zone;
200	31.26	0.121	248.6	41.88	35.65	0.213	51.29	28.66	5.531	24.61;
241	22.3	0.16	420.7	38.59	35.99	0.169	115.3	35.1	13.03	46.78; begin overlap;
242	22.09	0.161	425.5	38.3	35.99	0.168	117.6	35.22	13.28	47.41; matched energy radial
vel = 0.0675m/s;										
247	21.01	0.166	449.3	36.75	36.01	0.167	129.8	35.8	14.56	50.64; end overlap;
260	18.13	0.18	512.7	32.34	36.07	0.166	167.9	37.2	18.53	60.03; matched energy radial
vel = 0.0977m/s;										
261	17.9	0.181	517.7	31.99	36.07	0.166	171.3	37.3	18.88	60.82; matched energy radial
vel = 0.1m/s;										
263	17.44	0.183	527.6	31.31	36.08	0.166	178.2	37.51	19.61	62.45; matched energy radial
vel = 0.105m/s;										
277	14.0	0.2	598.0	26.69	36.12	0.171	235.1	38.91	25.74	75.42; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.19 m										
conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
5.85E-5	17075.0	1524.3	100.0	2382.8	0.0	0.0	1.00E-5	3.00E-4		

3.98E-5 25127.8 2243.3 200.0 5160.6 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 106; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.003.db; Diffuser table record 10: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.27	90.0	36.26	21.36	0.0	0.0	0.27	90.0	0.0003	25.38
0.914	0.255	90.0	36.26	21.35	0.0	0.0	0.255	90.0	0.0003	25.38
2.134	0.236	90.0	36.26	21.34	0.0	0.0	0.236	90.0	0.0003	25.38
3.048	0.221	90.0	36.26	21.32	0.0	0.0	0.221	90.0	0.0003	25.39
3.962	0.206	90.0	36.26	21.31	0.0	0.0	0.206	90.0	0.0003	25.39
4.877	0.192	90.0	36.25	21.3	0.0	0.0	0.192	90.0	0.0003	25.38
6.096	0.172	90.0	36.25	21.29	0.0	0.0	0.172	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.144	90.0	36.25	21.26	0.0	0.0	0.144	90.0	0.0003	25.4
9.144	0.127	90.0	36.25	21.25	0.0	0.0	0.127	90.0	0.0003	25.4
10.06	0.115	90.0	36.25	21.24	0.0	0.0	0.115	90.0	0.0003	25.4
10.97	0.102	90.0	36.25	21.22	0.0	0.0	0.102	90.0	0.0003	25.41
11.89	0.0896	90.0	36.25	21.21	0.0	0.0	0.0896	90.0	0.0003	25.41
13.07	0.0735	90.0	36.25	21.2	0.0	0.0	0.0735	90.0	0.0003	25.41
14.02	0.036	90.0	36.25	21.19	0.0	0.0	0.036	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	22.0	1.0

Simulation:

Froude number: 46.43; effleunt density (sigma-T) 9.156; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.036	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.12	0.0581	42.58	16.43	33.32	1.002	7.146	6.765	0.13	1.209;
170	38.11	0.0927	160.6	27.76	35.52	0.283	28.53	21.91	2.33	12.46; acute zone;
200	32.68	0.115	261.1	35.63	35.84	0.194	51.54	29.77	5.809	26.1;
227	27.71	0.136	371.0	36.03	36.0	0.16	85.23	34.72	10.31	40.76; begin overlap;
228	27.53	0.137	375.3	35.91	36.01	0.159	86.81	34.88	10.5	41.35; matched energy radial
vel = 0.0452m/s;										
253	22.73	0.158	493.0	30.52	36.1	0.149	140.1	38.4	16.86	58.82; end overlap;

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269    19.36    0.174    574.4    25.74    36.14    0.152    192.3    40.38    22.92    73.46; matched energy radial
vel = 0.0936m/s;
270    19.14    0.175    579.6    25.45    36.14    0.152    196.2    40.5     23.37    74.51; matched energy radial
vel = 0.0958m/s;
271    18.91    0.176    584.7    25.15    36.15    0.152    200.1    40.62    23.84    75.58; matched energy radial
vel = 0.098m/s;
283    16.06    0.19     647.4    21.76    36.17    0.158    253.8    42.02    30.33    89.79; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.44 m
  conc dilutn  width distance
  (kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
5.62E-5 17781.2 1592.4 100.0 2339.0 0.0 0.0 1.00E-5 3.00E-4
3.80E-5 26298.4 2355.1 200.0 5116.8 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 107; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.003.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.27	90.0	36.26	21.36	0.0	0.0	0.27	90.0	0.0003	25.38
0.914	0.255	90.0	36.26	21.35	0.0	0.0	0.255	90.0	0.0003	25.38
2.134	0.236	90.0	36.26	21.34	0.0	0.0	0.236	90.0	0.0003	25.38
3.048	0.221	90.0	36.26	21.32	0.0	0.0	0.221	90.0	0.0003	25.39
3.962	0.206	90.0	36.26	21.31	0.0	0.0	0.206	90.0	0.0003	25.39
4.877	0.192	90.0	36.25	21.3	0.0	0.0	0.192	90.0	0.0003	25.38
6.096	0.172	90.0	36.25	21.29	0.0	0.0	0.172	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.144	90.0	36.25	21.26	0.0	0.0	0.144	90.0	0.0003	25.4
9.144	0.127	90.0	36.25	21.25	0.0	0.0	0.127	90.0	0.0003	25.4
10.06	0.115	90.0	36.25	21.24	0.0	0.0	0.115	90.0	0.0003	25.4
10.97	0.102	90.0	36.25	21.22	0.0	0.0	0.102	90.0	0.0003	25.41
11.89	0.0896	90.0	36.25	21.21	0.0	0.0	0.0896	90.0	0.0003	25.41
13.07	0.0735	90.0	36.25	21.2	0.0	0.0	0.0735	90.0	0.0003	25.41
14.02	0.036	90.0	36.25	21.19	0.0	0.0	0.036	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	22.0	1.0

Simulation:

Froude number: 84.55; effleunt density (sigma-T) 20.46; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)																											
0	46.0	0.036	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;																											
100	44.15	0.0578	42.89	15.43	35.39	0.998	7.214	6.833	0.131	1.221;																											
168	39.47	0.0872	160.8	18.76	36.03	0.273	27.72	22.06	2.258	12.33; acute zone;																											
200	35.59	0.103	282.8	21.55	36.13	0.167	52.13	31.7	6.306	28.86;																											
219	33.37	0.113	366.7	21.55	36.16	0.14	72.85	36.13	9.673	40.98; begin overlap;																											
254	29.13	0.13	533.9	17.73	36.2	0.122	133.8	42.94	19.17	70.95; end overlap;																											
291	22.96	0.157	748.6	11.33	36.23	0.129	278.3	50.08	42.82	133.5; matched energy radial																											
vel = 0.0878m/s;																																					
292	22.77	0.158	754.7	11.16	36.23	0.13	283.9	50.27	43.8	135.9; matched energy radial																											
vel = 0.0896m/s;																																					
293	22.57	0.158	760.9	10.99	36.23	0.13	289.6	50.46	44.81	138.4; matched energy radial																											
vel = 0.0915m/s;																																					
298	21.55	0.163	792.0	10.15	36.23	0.133	319.7	51.42	50.24	151.3; surface;																											
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 20.12 m																																					
<table border="1"> <thead> <tr> <th>conc (kg/kg)</th> <th>dilutn</th> <th>width (m)</th> <th>distnce (m)</th> <th>time (hrs)</th> <th>(kg/kg)</th> <th>(s-1)</th> <th>(m/s)</th> <th>(m0.67/s2)</th> </tr> </thead> <tbody> <tr> <td>4.96E-5</td> <td>20171.5</td> <td>1754.0</td> <td>100.0</td> <td>2169.1</td> <td>0.0</td> <td>0.0</td> <td>1.00E-5</td> <td>3.00E-4</td> </tr> <tr> <td>3.28E-5</td> <td>30461.1</td> <td>2648.7</td> <td>200.0</td> <td>4946.9</td> <td>0.0</td> <td>0.0</td> <td>1.00E-5</td> <td>3.00E-4</td> </tr> </tbody> </table>											conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	4.96E-5	20171.5	1754.0	100.0	2169.1	0.0	0.0	1.00E-5	3.00E-4	3.28E-5	30461.1	2648.7	200.0	4946.9	0.0	0.0	1.00E-5	3.00E-4
conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)																													
4.96E-5	20171.5	1754.0	100.0	2169.1	0.0	0.0	1.00E-5	3.00E-4																													
3.28E-5	30461.1	2648.7	200.0	4946.9	0.0	0.0	1.00E-5	3.00E-4																													
count: 2																																					

/ UM3.

Case 108; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.003.db; Diffuser table record 12: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.27	90.0	36.26	21.36	0.0	0.0	0.27	90.0	0.0003	25.38
0.914	0.255	90.0	36.26	21.35	0.0	0.0	0.255	90.0	0.0003	25.38
2.134	0.236	90.0	36.26	21.34	0.0	0.0	0.236	90.0	0.0003	25.38
3.048	0.221	90.0	36.26	21.32	0.0	0.0	0.221	90.0	0.0003	25.39
3.962	0.206	90.0	36.26	21.31	0.0	0.0	0.206	90.0	0.0003	25.39
4.877	0.192	90.0	36.25	21.3	0.0	0.0	0.192	90.0	0.0003	25.38
6.096	0.172	90.0	36.25	21.29	0.0	0.0	0.172	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.144	90.0	36.25	21.26	0.0	0.0	0.144	90.0	0.0003	25.4
9.144	0.127	90.0	36.25	21.25	0.0	0.0	0.127	90.0	0.0003	25.4
10.06	0.115	90.0	36.25	21.24	0.0	0.0	0.115	90.0	0.0003	25.4
10.97	0.102	90.0	36.25	21.22	0.0	0.0	0.102	90.0	0.0003	25.41
11.89	0.0896	90.0	36.25	21.21	0.0	0.0	0.0896	90.0	0.0003	25.41
13.07	0.0735	90.0	36.25	21.2	0.0	0.0	0.0735	90.0	0.0003	25.41

14.02	0.036	90.0	36.25	21.19	0.0	0.0	0.036	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	22.0	1.0

Simulation:

Froude number: -44.76; effleunt density (sigma-T) 43.51; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.036	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	41.09	0.0805	43.76	43.73	39.53	0.976	7.355	4.984	0.165	1.209;
180	31.43	0.121	202.6	23.73	37.0	0.202	32.4	17.35	3.679	14.58; begin overlap;
200	30.38	0.125	247.3	14.57	36.85	0.168	40.01	19.85	5.379	19.94;
210	30.05	0.127	266.3	9.699	36.8	0.158	43.56	21.07	6.374	22.97; acute zone;
230	29.79	0.128	298.7	-0.371	36.73	0.147	50.59	23.55	8.705	29.84; local maximum rise or fall;
272	31.78	0.12	373.9	-20.49	36.57	0.14	75.41	29.3	16.08	50.55; end overlap;
300	38.05	0.0951	488.5	-31.0	36.44	0.137	126.5	34.53	27.34	81.21;
304	39.6	0.0889	509.4	-32.42	36.43	0.137	137.0	35.36	29.69	87.76; bottom hit;
335	57.2	-0.0938	659.5	-48.94	36.36	0.124	210.8	41.49	49.91	150.5; begin overlap;
400	72.78	-0.283	922.6	-78.71	36.33	0.0901	296.0	45.0	56.63	202.8;
500	88.99	-0.478	898.0	-33.5	36.31	0.135	415.1	47.93	47.11	262.3;
533	94.84	-0.548	812.7	-15.07	36.29	0.222	555.0	48.9	33.03	289.0; end overlap;
549	99.28	-0.6	798.3	-8.027	36.28	0.311	750.8	49.61	8.959	316.4; stream limit reached;
554	100.7	-0.617	803.3	-6.679	36.28	0.339	828.9	49.83	-1.987	326.6; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 20.40 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.84E-5	54241.8	1845.1	100.0	2355.6	0.0	0.0	1.00E-5	3.00E-4
1.24E-5	80070.1	2723.7	200.0	5133.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 109; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.004.db; Diffuser table record 1: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.45	90.0	36.26	21.36	0.0	0.0	0.45	90.0	0.0003	25.38
0.914	0.426	90.0	36.26	21.35	0.0	0.0	0.426	90.0	0.0003	25.38

2.134	0.393	90.0	36.26	21.34	0.0	0.0	0.393	90.0	0.0003	25.38
3.048	0.368	90.0	36.26	21.32	0.0	0.0	0.368	90.0	0.0003	25.39
3.962	0.344	90.0	36.26	21.31	0.0	0.0	0.344	90.0	0.0003	25.39
4.877	0.319	90.0	36.25	21.3	0.0	0.0	0.319	90.0	0.0003	25.38
6.096	0.287	90.0	36.25	21.29	0.0	0.0	0.287	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.24	90.0	36.25	21.26	0.0	0.0	0.24	90.0	0.0003	25.4
9.144	0.212	90.0	36.25	21.25	0.0	0.0	0.212	90.0	0.0003	25.4
10.06	0.191	90.0	36.25	21.24	0.0	0.0	0.191	90.0	0.0003	25.4
10.97	0.17	90.0	36.25	21.22	0.0	0.0	0.17	90.0	0.0003	25.41
11.89	0.149	90.0	36.25	21.21	0.0	0.0	0.149	90.0	0.0003	25.41
13.07	0.122	90.0	36.25	21.2	0.0	0.0	0.123	90.0	0.0003	25.41
14.02	0.06	90.0	36.25	21.19	0.0	0.0	0.0601	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	22.0	1.0

Simulation:

Froude number: 12.75; effleunt density (sigma-T) 1.618; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	44.18	0.0956	40.59	26.88	31.94	0.367	7.099	5.033	0.433	2.52;
200	37.67	0.158	162.4	34.54	35.65	0.166	50.7	11.12	5.977	18.6;
256	31.55	0.2	274.2	21.81	36.05	0.177	153.6	13.1	17.84	42.93; acute zone;
300	24.49	0.249	393.2	13.83	36.17	0.206	367.2	14.27	40.82	81.18;
341	16.06	0.317	536.2	8.056	36.21	0.25	826.9	15.1	86.85	143.5; matched energy radial
vel = 0.174m/s;										
344	15.38	0.323	548.0	7.711	36.22	0.254	877.5	15.15	91.81	149.5; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.92 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.67E-5	59951.9	1314.3	100.0	1989.9	0.0	0.0	1.00E-5	3.00E-4
1.07E-5	92795.2	2034.3	200.0	4767.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 110; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.004.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.45	90.0	36.26	21.36	0.0	0.0	0.45	90.0	0.0003	25.38
0.914	0.426	90.0	36.26	21.35	0.0	0.0	0.426	90.0	0.0003	25.38
2.134	0.393	90.0	36.26	21.34	0.0	0.0	0.393	90.0	0.0003	25.38
3.048	0.368	90.0	36.26	21.32	0.0	0.0	0.368	90.0	0.0003	25.39
3.962	0.344	90.0	36.26	21.31	0.0	0.0	0.344	90.0	0.0003	25.39
4.877	0.319	90.0	36.25	21.3	0.0	0.0	0.319	90.0	0.0003	25.38
6.096	0.287	90.0	36.25	21.29	0.0	0.0	0.287	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.24	90.0	36.25	21.26	0.0	0.0	0.24	90.0	0.0003	25.4
9.144	0.212	90.0	36.25	21.25	0.0	0.0	0.212	90.0	0.0003	25.4
10.06	0.191	90.0	36.25	21.24	0.0	0.0	0.191	90.0	0.0003	25.4
10.97	0.17	90.0	36.25	21.22	0.0	0.0	0.17	90.0	0.0003	25.41
11.89	0.149	90.0	36.25	21.21	0.0	0.0	0.149	90.0	0.0003	25.41
13.07	0.122	90.0	36.25	21.2	0.0	0.0	0.123	90.0	0.0003	25.41
14.02	0.06	90.0	36.25	21.19	0.0	0.0	0.0601	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	22.0	1.0

Simulation:

Froude number: 15.48; effleunt density (sigma-T) 9.156; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	44.29	0.0934	41.29	23.42	33.32	0.356	7.146	5.124	0.442	2.578;
200	38.81	0.15	167.4	29.1	35.82	0.152	49.16	11.63	6.132	19.58;
251	33.86	0.184	268.4	19.51	36.1	0.162	134.9	13.79	17.34	44.01; acute zone;
300	26.54	0.235	400.1	11.87	36.19	0.193	356.1	15.42	44.83	92.75;
348	16.87	0.31	573.7	6.042	36.23	0.243	921.1	16.6	110.6	185.2; matched energy radial
350	16.43	0.314	582.0	5.841	36.23	0.246	958.3	16.64	114.9	190.5; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.78 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.64E-5	60946.3	1299.2	100.0	1794.7	0.0	0.0	1.00E-5	3.00E-4
1.02E-5	97276.5	2073.7	200.0	4572.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 111; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.004.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spdx	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.45	90.0	36.26	21.36	0.0	0.0	0.45	90.0	0.0003	25.38
0.914	0.426	90.0	36.26	21.35	0.0	0.0	0.426	90.0	0.0003	25.38
2.134	0.393	90.0	36.26	21.34	0.0	0.0	0.393	90.0	0.0003	25.38
3.048	0.368	90.0	36.26	21.32	0.0	0.0	0.368	90.0	0.0003	25.39
3.962	0.344	90.0	36.26	21.31	0.0	0.0	0.344	90.0	0.0003	25.39
4.877	0.319	90.0	36.25	21.3	0.0	0.0	0.319	90.0	0.0003	25.38
6.096	0.287	90.0	36.25	21.29	0.0	0.0	0.287	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.24	90.0	36.25	21.26	0.0	0.0	0.24	90.0	0.0003	25.4
9.144	0.212	90.0	36.25	21.25	0.0	0.0	0.212	90.0	0.0003	25.4
10.06	0.191	90.0	36.25	21.24	0.0	0.0	0.191	90.0	0.0003	25.4
10.97	0.17	90.0	36.25	21.22	0.0	0.0	0.17	90.0	0.0003	25.41
11.89	0.149	90.0	36.25	21.21	0.0	0.0	0.149	90.0	0.0003	25.41
13.07	0.122	90.0	36.25	21.2	0.0	0.0	0.123	90.0	0.0003	25.41
14.02	0.06	90.0	36.25	21.19	0.0	0.0	0.0601	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	22.0	1.0

Simulation:

Froude number: 28.18; effleunt density (sigma-T) 20.46; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.06	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.48	0.0898	42.27	17.54	35.39	0.343	7.214	5.261	0.455	2.665;
155	42.67	0.124	105.6	20.29	35.95	0.157	20.41	9.913	2.519	10.41; begin overlap;
189	41.52	0.132	154.1	17.72	36.08	0.132	36.45	12.0	5.081	18.02; end overlap;
200	41.04	0.135	173.5	16.27	36.11	0.13	45.24	12.7	6.47	21.81;
239	38.66	0.151	251.1	11.95	36.19	0.135	97.92	15.27	15.91	45.24; acute zone;
300	31.81	0.198	416.8	6.643	36.23	0.164	327.7	18.95	60.18	136.7;
342	25.06	0.245	575.6	3.209	36.24	0.197	752.8	21.05	144.3	278.1; trap level;
373	21.26	0.276	728.2	0.292	36.25	0.228	1390.9	22.5	286.3	480.0; matched energy radial
377	21.23	0.277	751.4	-0.0522	36.25	0.231	1505.6	22.69	313.6	516.2; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 19.09 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
4.48E-5	22301.1	390.9	100.0	115.3	0.0	0.0	1.00E-5	3.00E-4
8.96E-6	1.11E+5	1955.8	200.0	2893.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 112; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.004.db; Diffuser table record 4: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.45	90.0	36.26	21.36	0.0	0.0	0.45	90.0	0.0003	25.38
0.914	0.426	90.0	36.26	21.35	0.0	0.0	0.426	90.0	0.0003	25.38
2.134	0.393	90.0	36.26	21.34	0.0	0.0	0.393	90.0	0.0003	25.38
3.048	0.368	90.0	36.26	21.32	0.0	0.0	0.368	90.0	0.0003	25.39
3.962	0.344	90.0	36.26	21.31	0.0	0.0	0.344	90.0	0.0003	25.39
4.877	0.319	90.0	36.25	21.3	0.0	0.0	0.319	90.0	0.0003	25.38
6.096	0.287	90.0	36.25	21.29	0.0	0.0	0.287	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.24	90.0	36.25	21.26	0.0	0.0	0.24	90.0	0.0003	25.4
9.144	0.212	90.0	36.25	21.25	0.0	0.0	0.212	90.0	0.0003	25.4
10.06	0.191	90.0	36.25	21.24	0.0	0.0	0.191	90.0	0.0003	25.4
10.97	0.17	90.0	36.25	21.22	0.0	0.0	0.17	90.0	0.0003	25.41
11.89	0.149	90.0	36.25	21.21	0.0	0.0	0.149	90.0	0.0003	25.41
13.07	0.122	90.0	36.25	21.2	0.0	0.0	0.123	90.0	0.0003	25.41
14.02	0.06	90.0	36.25	21.19	0.0	0.0	0.0601	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	22.0	1.0

Simulation:

Froude number: -14.92; effleunt density (sigma-T) 43.51; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	42.57	0.124	45.28	34.83	39.53	0.304	7.355	3.793	0.541	2.593;
123	41.83	0.13	65.43	25.66	38.53	0.211	10.58	4.927	1.083	4.384; begin overlap;

178	41.17	0.134	101.9	-0.072	37.61	0.148	17.81	7.144	3.038	9.976; local maximum rise or fall;
200	41.34	0.133	114.0	-10.87	37.37	0.143	21.55	8.107	4.286	13.31;
214	41.66	0.131	125.1	-16.92	37.19	0.142	25.75	8.774	5.356	16.1; end overlap;
258	45.61	0.0719	192.4	-32.16	36.65	0.139	59.77	11.45	12.98	35.56; bottom hit;
276	49.7	-0.00903	214.7	-42.45	36.58	0.139	74.16	12.68	18.17	50.34; acute zone;
294	53.62	-0.0893	249.1	-53.01	36.52	0.125	90.38	13.52	21.66	62.43; begin overlap;
300	54.5	-0.107	263.3	-56.43	36.5	0.119	95.8	13.69	22.26	65.15;
400	64.23	-0.303	366.1	-63.84	36.4	0.102	157.8	15.11	23.3	96.19;
478	71.25	-0.443	344.2	-20.12	36.34	0.199	268.3	15.85	14.21	122.1; end overlap;
500	74.33	-0.504	350.8	-10.19	36.31	0.288	403.9	16.13	1.594	138.1;
600	86.75	-0.753	642.5	-1.036	36.26	0.616	2926.5	16.94	-272.2	305.1;
601	86.86	-0.756	647.4	-1.011	36.26	0.618	2985.0	16.95	-278.4	308.2; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.45 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.13E-5	88242.8	671.8	100.0	416.2	0.0	0.0	1.00E-5	3.00E-4
4.09E-6	2.44E+5	1860.7	200.0	3193.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 113; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.004.db; Diffuser table record 5: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.45	90.0	36.26	21.36	0.0	0.0	0.45	90.0	0.0003	25.38
0.914	0.426	90.0	36.26	21.35	0.0	0.0	0.426	90.0	0.0003	25.38
2.134	0.393	90.0	36.26	21.34	0.0	0.0	0.393	90.0	0.0003	25.38
3.048	0.368	90.0	36.26	21.32	0.0	0.0	0.368	90.0	0.0003	25.39
3.962	0.344	90.0	36.26	21.31	0.0	0.0	0.344	90.0	0.0003	25.39
4.877	0.319	90.0	36.25	21.3	0.0	0.0	0.319	90.0	0.0003	25.38
6.096	0.287	90.0	36.25	21.29	0.0	0.0	0.287	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.24	90.0	36.25	21.26	0.0	0.0	0.24	90.0	0.0003	25.4
9.144	0.212	90.0	36.25	21.25	0.0	0.0	0.212	90.0	0.0003	25.4
10.06	0.191	90.0	36.25	21.24	0.0	0.0	0.191	90.0	0.0003	25.4
10.97	0.17	90.0	36.25	21.22	0.0	0.0	0.17	90.0	0.0003	25.41
11.89	0.149	90.0	36.25	21.21	0.0	0.0	0.149	90.0	0.0003	25.41
13.07	0.122	90.0	36.25	21.2	0.0	0.0	0.123	90.0	0.0003	25.41
14.02	0.06	90.0	36.25	21.19	0.0	0.0	0.0601	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	22.0	1.0

Simulation:

Froude number: 25.49; effleunt density (sigma-T) 1.618; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	44.22	0.095	42.07	18.97	31.94	0.681	7.099	6.002	0.275	1.567;
200	36.4	0.167	210.9	33.93	35.64	0.193	49.93	18.11	6.299	18.65;
222	33.99	0.183	270.0	29.89	35.85	0.183	77.17	19.87	9.727	26.09; acute zone;
300	20.93	0.277	530.7	13.96	36.17	0.223	361.6	24.85	45.92	85.52;
314	17.68	0.304	588.9	11.67	36.19	0.239	477.1	25.54	60.36	105.0; matched energy radial
vel = 0.166m/s;										
318	16.7	0.312	606.3	11.06	36.19	0.244	516.4	25.73	65.26	111.3; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.40 m										
conc dilutn width distnce time										
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)										
2.80E-5 35735.9 1472.7 100.0 2183.9 0.0 0.0 1.00E-5 3.00E-4										
1.86E-5 53863.1 2219.8 200.0 4961.6 0.0 0.0 1.00E-5 3.00E-4										
count: 2										

/ UM3.

Case 114; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.004.db; Diffuser table record 6: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.45	90.0	36.26	21.36	0.0	0.0	0.45	90.0	0.0003	25.38
0.914	0.426	90.0	36.26	21.35	0.0	0.0	0.426	90.0	0.0003	25.38
2.134	0.393	90.0	36.26	21.34	0.0	0.0	0.393	90.0	0.0003	25.38
3.048	0.368	90.0	36.26	21.32	0.0	0.0	0.368	90.0	0.0003	25.39
3.962	0.344	90.0	36.26	21.31	0.0	0.0	0.344	90.0	0.0003	25.39
4.877	0.319	90.0	36.25	21.3	0.0	0.0	0.319	90.0	0.0003	25.38
6.096	0.287	90.0	36.25	21.29	0.0	0.0	0.287	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.24	90.0	36.25	21.26	0.0	0.0	0.24	90.0	0.0003	25.4
9.144	0.212	90.0	36.25	21.25	0.0	0.0	0.212	90.0	0.0003	25.4
10.06	0.191	90.0	36.25	21.24	0.0	0.0	0.191	90.0	0.0003	25.4
10.97	0.17	90.0	36.25	21.22	0.0	0.0	0.17	90.0	0.0003	25.41
11.89	0.149	90.0	36.25	21.21	0.0	0.0	0.149	90.0	0.0003	25.41

13.07	0.122	90.0	36.25	21.2	0.0	0.0	0.123	90.0	0.0003	25.41
14.02	0.06	90.0	36.25	21.19	0.0	0.0	0.0601	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	22.0	1.0

Simulation:

Froude number: 30.96; effleunt density (sigma-T) 9.156; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	44.26	0.0942	42.35	17.73	33.32	0.676	7.146	6.054	0.278	1.582;
198	37.69	0.158	211.4	28.58	35.81	0.182	47.19	18.45	6.164	18.7; begin overlap;
200	37.52	0.159	216.4	28.4	35.82	0.18	48.97	18.63	6.414	19.3;
205	37.09	0.162	229.3	27.84	35.86	0.176	53.82	19.09	7.084	20.87; end overlap;
217	35.97	0.17	262.4	25.99	35.94	0.171	68.15	20.16	9.027	25.27; acute zone;
300	23.42	0.257	543.1	11.97	36.19	0.208	352.5	26.54	49.9	96.55;
321	18.67	0.296	634.4	9.052	36.21	0.231	534.3	27.79	75.98	133.4; matched energy radial

vel = 0.163m/s;

324	17.94	0.302	648.2	8.665	36.21	0.235	567.0	27.96	80.67	139.6; surface;
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Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.47 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.69E-5	37224.5	1493.8	100.0	2054.9	0.0	0.0	1.00E-5	3.00E-4
1.75E-5	57083.6	2290.7	200.0	4832.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 115; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.004.db; Diffuser table record 7: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.45	90.0	36.26	21.36	0.0	0.0	0.45	90.0	0.0003	25.38
0.914	0.426	90.0	36.26	21.35	0.0	0.0	0.426	90.0	0.0003	25.38
2.134	0.393	90.0	36.26	21.34	0.0	0.0	0.393	90.0	0.0003	25.38
3.048	0.368	90.0	36.26	21.32	0.0	0.0	0.368	90.0	0.0003	25.39
3.962	0.344	90.0	36.26	21.31	0.0	0.0	0.344	90.0	0.0003	25.39
4.877	0.319	90.0	36.25	21.3	0.0	0.0	0.319	90.0	0.0003	25.38
6.096	0.287	90.0	36.25	21.29	0.0	0.0	0.287	90.0	0.0003	25.39

7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.24	90.0	36.25	21.26	0.0	0.0	0.24	90.0	0.0003	25.4
9.144	0.212	90.0	36.25	21.25	0.0	0.0	0.212	90.0	0.0003	25.4
10.06	0.191	90.0	36.25	21.24	0.0	0.0	0.191	90.0	0.0003	25.4
10.97	0.17	90.0	36.25	21.22	0.0	0.0	0.17	90.0	0.0003	25.41
11.89	0.149	90.0	36.25	21.21	0.0	0.0	0.149	90.0	0.0003	25.41
13.07	0.122	90.0	36.25	21.2	0.0	0.0	0.123	90.0	0.0003	25.41
14.02	0.06	90.0	36.25	21.19	0.0	0.0	0.0601	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	22.0	1.0

Simulation:

Froude number: 56.37; effleunt density (sigma-T) 20.46; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.32	0.093	42.76	15.8	35.39	0.669	7.214	6.132	0.281	1.605;
190	40.03	0.142	201.4	17.39	36.1	0.171	40.42	18.56	5.511	17.65; begin overlap;
200	39.52	0.145	226.1	16.65	36.12	0.161	47.94	19.65	6.761	20.85;
208	39.09	0.148	247.1	15.89	36.14	0.156	55.23	20.52	7.963	23.83; acute zone;
211	38.92	0.15	255.4	15.56	36.14	0.154	58.35	20.84	8.469	25.06; end overlap;
300	29.49	0.214	576.9	6.34	36.23	0.177	338.3	31.39	65.36	136.9;
332	23.64	0.255	737.2	3.685	36.24	0.204	637.5	34.92	134.2	247.3; trap level;
338	22.51	0.265	770.9	3.104	36.24	0.21	717.9	35.55	153.6	275.8; matched energy radial
340	22.14	0.268	782.3	2.906	36.24	0.212	746.9	35.76	160.7	286.1; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 19.87 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.65E-5	37792.6	1389.5	100.0	1383.5	0.0	0.0	1.00E-5	3.00E-4
1.52E-5	65538.2	2409.6	200.0	4161.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 116; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.004.db; Diffuser table record 8: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
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0.0	0.45	90.0	36.26	21.36	0.0	0.0	0.45	90.0	0.0003	25.38
0.914	0.426	90.0	36.26	21.35	0.0	0.0	0.426	90.0	0.0003	25.38
2.134	0.393	90.0	36.26	21.34	0.0	0.0	0.393	90.0	0.0003	25.38
3.048	0.368	90.0	36.26	21.32	0.0	0.0	0.368	90.0	0.0003	25.39
3.962	0.344	90.0	36.26	21.31	0.0	0.0	0.344	90.0	0.0003	25.39
4.877	0.319	90.0	36.25	21.3	0.0	0.0	0.319	90.0	0.0003	25.38
6.096	0.287	90.0	36.25	21.29	0.0	0.0	0.287	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.24	90.0	36.25	21.26	0.0	0.0	0.24	90.0	0.0003	25.4
9.144	0.212	90.0	36.25	21.25	0.0	0.0	0.212	90.0	0.0003	25.4
10.06	0.191	90.0	36.25	21.24	0.0	0.0	0.191	90.0	0.0003	25.4
10.97	0.17	90.0	36.25	21.22	0.0	0.0	0.17	90.0	0.0003	25.41
11.89	0.149	90.0	36.25	21.21	0.0	0.0	0.149	90.0	0.0003	25.41
13.07	0.122	90.0	36.25	21.2	0.0	0.0	0.123	90.0	0.0003	25.41
14.02	0.06	90.0	36.25	21.19	0.0	0.0	0.0601	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	22.0	1.0

Simulation:

Froude number: -29.84; effleunt density (sigma-T) 43.51; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	41.75	0.13	43.99	42.19	39.53	0.644	7.355	4.38	0.339	1.546;
154	37.86	0.157	119.4	27.57	37.46	0.24	20.02	9.225	2.354	7.08; begin overlap;
200	36.37	0.168	184.6	8.527	36.95	0.175	34.53	12.42	5.722	14.72;
220	36.18	0.169	212.6	-0.303	36.8	0.167	43.61	13.97	8.25	20.07; local maximum rise or fall;
223	36.19	0.169	217.2	-1.61	36.78	0.166	45.34	14.22	8.729	21.07; end overlap;
247	37.02	0.164	264.2	-11.71	36.61	0.166	66.81	16.6	14.52	32.73; acute zone;
277	41.03	0.137	356.0	-19.64	36.45	0.165	121.0	19.79	27.6	58.56; bottom hit;
300	48.87	0.0126	458.5	-27.44	36.38	0.152	186.2	22.54	45.62	96.68;
316	55.36	-0.122	551.6	-37.01	36.36	0.126	226.0	24.02	56.0	123.1; begin overlap;
400	67.83	-0.375	839.3	-81.06	36.33	0.0772	314.6	26.11	64.23	173.3;
500	78.01	-0.579	755.9	-36.02	36.31	0.121	396.7	27.45	58.82	214.6;
540	82.71	-0.672	622.6	-12.98	36.29	0.247	540.5	28.01	47.07	236.8; end overlap;
593	91.6	-0.85	672.3	-2.074	36.27	0.591	1531.9	28.98	-67.13	314.9; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.08 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
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9.82E-6 1.01E+5 1568.7 100.0 2158.7 0.0 0.0 1.00E-5 3.00E-4
 6.50E-6 1.54E+5 2372.2 200.0 4936.5 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 117; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.004.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.45	90.0	36.26	21.36	0.0	0.0	0.45	90.0	0.0003	25.38
0.914	0.426	90.0	36.26	21.35	0.0	0.0	0.426	90.0	0.0003	25.38
2.134	0.393	90.0	36.26	21.34	0.0	0.0	0.393	90.0	0.0003	25.38
3.048	0.368	90.0	36.26	21.32	0.0	0.0	0.368	90.0	0.0003	25.39
3.962	0.344	90.0	36.26	21.31	0.0	0.0	0.344	90.0	0.0003	25.39
4.877	0.319	90.0	36.25	21.3	0.0	0.0	0.319	90.0	0.0003	25.38
6.096	0.287	90.0	36.25	21.29	0.0	0.0	0.287	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.24	90.0	36.25	21.26	0.0	0.0	0.24	90.0	0.0003	25.4
9.144	0.212	90.0	36.25	21.25	0.0	0.0	0.212	90.0	0.0003	25.4
10.06	0.191	90.0	36.25	21.24	0.0	0.0	0.191	90.0	0.0003	25.4
10.97	0.17	90.0	36.25	21.22	0.0	0.0	0.17	90.0	0.0003	25.41
11.89	0.149	90.0	36.25	21.21	0.0	0.0	0.149	90.0	0.0003	25.41
13.07	0.122	90.0	36.25	21.2	0.0	0.0	0.123	90.0	0.0003	25.41
14.02	0.06	90.0	36.25	21.19	0.0	0.0	0.0601	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	22.0	1.0

Simulation:

Froude number: 38.24; effleunt density (sigma-T) 1.618; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.06	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.2	0.0954	42.36	16.94	31.94	1.007	7.099	6.395	0.2	1.13;
188	37.0	0.163	204.5	31.13	35.49	0.247	40.1	21.63	4.871	14.69; acute zone;
200	35.62	0.172	239.6	31.64	35.64	0.224	49.97	23.33	6.339	18.13;
211	34.36	0.181	273.8	31.09	35.75	0.21	61.05	24.69	7.878	21.53; begin overlap;
227	32.39	0.194	328.3	28.81	35.88	0.199	82.79	26.53	10.75	27.45; end overlap;

```

292    21.05    0.276    590.7    15.51    36.15    0.224    299.8    32.93    40.07    75.09; matched energy radial
vel = 0.131m/s;
293    20.83    0.278    595.2    15.33    36.15    0.225    305.8    33.01    40.9    76.25; matched energy radial
vel = 0.134m/s;
300    19.18    0.291    627.7    14.08    36.16    0.232    351.3    33.6    47.18    84.92;
301    18.94    0.293    632.4    13.91    36.16    0.234    358.3    33.68    48.15    86.23; matched energy radial
vel = 0.162m/s;
306    17.71    0.303    656.3    13.06    36.17    0.239    395.6    34.08    53.32    93.08; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.67 m
  conc dilutn width distnce time
  (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
3.70E-5 27017.1 1573.2 100.0 2242.0 0.0 0.0 1.00E-5 3.00E-4
2.47E-5 40424.8 2353.9 200.0 5019.8 0.0 0.0 1.00E-5 3.00E-4
count: 2

```

/ UM3.

Case 118; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.004.db; Diffuser table record 10: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.45	90.0	36.26	21.36	0.0	0.0	0.45	90.0	0.0003	25.38
0.914	0.426	90.0	36.26	21.35	0.0	0.0	0.426	90.0	0.0003	25.38
2.134	0.393	90.0	36.26	21.34	0.0	0.0	0.393	90.0	0.0003	25.38
3.048	0.368	90.0	36.26	21.32	0.0	0.0	0.368	90.0	0.0003	25.39
3.962	0.344	90.0	36.26	21.31	0.0	0.0	0.344	90.0	0.0003	25.39
4.877	0.319	90.0	36.25	21.3	0.0	0.0	0.319	90.0	0.0003	25.38
6.096	0.287	90.0	36.25	21.29	0.0	0.0	0.287	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.24	90.0	36.25	21.26	0.0	0.0	0.24	90.0	0.0003	25.4
9.144	0.212	90.0	36.25	21.25	0.0	0.0	0.212	90.0	0.0003	25.4
10.06	0.191	90.0	36.25	21.24	0.0	0.0	0.191	90.0	0.0003	25.4
10.97	0.17	90.0	36.25	21.22	0.0	0.0	0.17	90.0	0.0003	25.41
11.89	0.149	90.0	36.25	21.21	0.0	0.0	0.149	90.0	0.0003	25.41
13.07	0.122	90.0	36.25	21.2	0.0	0.0	0.123	90.0	0.0003	25.41
14.02	0.06	90.0	36.25	21.19	0.0	0.0	0.0601	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	22.0	1.0

Simulation:

Froude number: 46.43; effleunt density (sigma-T) 9.156; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.21	0.0951	42.56	16.32	33.32	1.003	7.146	6.437	0.201	1.137;
185	38.05	0.155	201.5	26.02	35.7	0.241	38.18	21.63	4.658	14.33; acute zone;
200	36.58	0.166	246.6	26.52	35.83	0.212	49.99	23.91	6.52	18.81;
206	36.01	0.17	265.2	26.33	35.87	0.204	55.53	24.72	7.347	20.71; begin overlap;
230	33.48	0.187	347.0	23.74	36.01	0.186	86.26	27.75	11.77	30.15; end overlap;
300	21.79	0.27	644.2	11.97	36.19	0.217	344.9	35.66	51.0	94.99;
307	20.16	0.283	678.8	10.95	36.2	0.224	396.2	36.34	59.07	106.4; matched energy radial

vel = 0.157m/s;

311	19.19	0.291	699.1	10.38	36.2	0.229	428.9	36.72	64.24	113.4; surface;
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Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.76 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.56E-5	28093.2	1607.3	100.0	2151.3	0.0	0.0	1.00E-5	3.00E-4
2.35E-5	42522.3	2432.8	200.0	4929.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 119; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.004.db; Diffuser table record 11: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.45	90.0	36.26	21.36	0.0	0.0	0.45	90.0	0.0003	25.38
0.914	0.426	90.0	36.26	21.35	0.0	0.0	0.426	90.0	0.0003	25.38
2.134	0.393	90.0	36.26	21.34	0.0	0.0	0.393	90.0	0.0003	25.38
3.048	0.368	90.0	36.26	21.32	0.0	0.0	0.368	90.0	0.0003	25.39
3.962	0.344	90.0	36.26	21.31	0.0	0.0	0.344	90.0	0.0003	25.39
4.877	0.319	90.0	36.25	21.3	0.0	0.0	0.319	90.0	0.0003	25.38
6.096	0.287	90.0	36.25	21.29	0.0	0.0	0.287	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.24	90.0	36.25	21.26	0.0	0.0	0.24	90.0	0.0003	25.4
9.144	0.212	90.0	36.25	21.25	0.0	0.0	0.212	90.0	0.0003	25.4
10.06	0.191	90.0	36.25	21.24	0.0	0.0	0.191	90.0	0.0003	25.4
10.97	0.17	90.0	36.25	21.22	0.0	0.0	0.17	90.0	0.0003	25.41
11.89	0.149	90.0	36.25	21.21	0.0	0.0	0.149	90.0	0.0003	25.41
13.07	0.122	90.0	36.25	21.2	0.0	0.0	0.123	90.0	0.0003	25.41
14.02	0.06	90.0	36.25	21.19	0.0	0.0	0.0601	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	22.0	1.0

Simulation:

Froude number: 84.55; effleunt density (sigma-T) 20.46; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.24	0.0946	42.86	15.38	35.39	0.999	7.214	6.501	0.204	1.149;
181	39.58	0.145	196.9	17.21	36.08	0.236	35.8	21.58	4.356	13.79; acute zone;
200	38.3	0.154	257.3	16.62	36.13	0.195	50.16	24.92	6.86	20.07;
205	37.99	0.156	273.5	16.3	36.14	0.188	54.57	25.68	7.601	21.84; begin overlap;
228	36.45	0.167	353.6	14.15	36.17	0.168	81.31	29.11	12.08	32.02; end overlap;
300	28.04	0.224	686.7	6.285	36.23	0.186	336.6	41.13	64.6	128.8;
322	23.95	0.253	815.2	4.488	36.24	0.204	520.3	44.82	108.6	198.0; matched energy radial

vel = 0.145m/s;

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
325	23.35	0.258	834.1	4.211	36.24	0.207	552.2	45.32	116.6	209.7; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 21.19 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.28E-5	30482.7	1616.2	100.0	1718.9	0.0	0.0	1.00E-5	3.00E-4
2.03E-5	49299.9	2614.0	200.0	4496.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 120; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.004.db; Diffuser table record 12: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.45	90.0	36.26	21.36	0.0	0.0	0.45	90.0	0.0003	25.38
0.914	0.426	90.0	36.26	21.35	0.0	0.0	0.426	90.0	0.0003	25.38
2.134	0.393	90.0	36.26	21.34	0.0	0.0	0.393	90.0	0.0003	25.38
3.048	0.368	90.0	36.26	21.32	0.0	0.0	0.368	90.0	0.0003	25.39
3.962	0.344	90.0	36.26	21.31	0.0	0.0	0.344	90.0	0.0003	25.39
4.877	0.319	90.0	36.25	21.3	0.0	0.0	0.319	90.0	0.0003	25.38
6.096	0.287	90.0	36.25	21.29	0.0	0.0	0.287	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.24	90.0	36.25	21.26	0.0	0.0	0.24	90.0	0.0003	25.4
9.144	0.212	90.0	36.25	21.25	0.0	0.0	0.212	90.0	0.0003	25.4

10.06	0.191	90.0	36.25	21.24	0.0	0.0	0.191	90.0	0.0003	25.4
10.97	0.17	90.0	36.25	21.22	0.0	0.0	0.17	90.0	0.0003	25.41
11.89	0.149	90.0	36.25	21.21	0.0	0.0	0.149	90.0	0.0003	25.41
13.07	0.122	90.0	36.25	21.2	0.0	0.0	0.123	90.0	0.0003	25.41
14.02	0.06	90.0	36.25	21.19	0.0	0.0	0.0601	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	22.0	1.0

Simulation:

Froude number: -44.76; effleunt density (sigma-T) 43.51; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.06	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	41.4	0.132	43.67	43.68	39.53	0.98	7.355	4.666	0.249	1.114;
171	34.38	0.181	165.2	28.96	37.1	0.266	28.25	12.86	3.405	8.898; begin overlap;
200	32.77	0.192	224.4	18.03	36.84	0.211	41.24	15.47	6.051	14.25;
234	31.59	0.201	296.5	4.261	36.63	0.19	64.42	18.78	11.54	24.4; acute zone, end overlap;
245	31.5	0.201	323.2	-0.334	36.57	0.189	75.97	20.13	14.75	30.03; local maximum rise or fall;
292	37.12	0.164	503.0	-14.73	36.38	0.191	186.3	27.37	45.72	81.7; bottom hit;
300	39.38	0.149	548.8	-16.0	36.36	0.188	218.2	28.51	53.82	95.4;
333	57.81	-0.17	894.0	-29.63	36.31	0.126	397.4	33.81	101.7	189.9; begin overlap;
400	70.54	-0.428	1426.5	-67.14	36.3	0.0648	510.3	36.18	114.5	254.1;
500	81.48	-0.648	1456.7	-52.46	36.29	0.071	577.0	37.97	113.0	311.2;
518	83.33	-0.685	1382.7	-42.46	36.29	0.0812	593.2	38.27	111.3	321.4; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 35.12 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	dispersion (kg/kg)	width (s-1)	depth (m/s)	width (m0.67/s2)
3.55E-5	28164.1	2304.4	100.0	1780.9	0.0	0.0	1.00E-5	3.00E-4
2.22E-5	45056.7	3686.6						

Appendix F-1c

VP Text Output of Modeling Runs described in Phase 3 of the Modeling Results

Flow Volume Variation

/ UM3. 8/28/2006 11:46:03 AM

Case 1; ambient file C:\Plumes\Proj\00\00_SUM_49ft_Flow_volume.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)

0	46.0	2.402E-5	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.95	4.007E-5	42.81	16.25	35.54	0.667	7.21	7.412	0.000147	2.025;
152	38.7	6.009E-5	117.6	22.6	36.12	0.248	20.18	22.43	0.00183	15.67; acute zone;
168	34.94	7.026E-5	159.3	25.66	36.2	0.185	27.7	30.67	0.00383	28.82; trap level;
183	33.14	7.591E-5	188.9	16.43	36.23	0.152	31.62	35.07	0.00527	37.5; begin overlap;
200	32.72	7.715E-5	200.6	6.576	36.23	0.141	32.93	37.13	0.00603	41.91;
212	32.66	7.737E-5	205.4	-0.313	36.24	0.137	33.59	38.43	0.00653	44.77; local maximum rise or fall;
255	33.94	7.404E-5	214.2	-24.58	36.25	0.138	36.7	43.57	0.00864	56.63; end overlap;
266	36.16	6.890E-5	230.3	-28.85	36.26	0.13	40.67	47.73	0.0106	67.33; trap level;
277	37.66	6.371E-5	256.5	-21.45	36.27	0.114	43.61	50.9	0.0123	76.2; begin overlap;
300	38.66	6.076E-5	280.1	-8.138	36.28	0.101	46.07	54.7	0.0144	87.48;
315	38.8	6.033E-5	287.9	0.477	36.28	0.0981	47.07	56.81	0.0157	93.99; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.31 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
2.34E-4	4281.8	919.3	100.0	2296.8	0.0	0.0	1.00E-5	3.00E-4	
1.57E-4	6364.4	1366.5	200.0	5074.5	0.0	0.0	1.00E-5	3.00E-4	

count: 2

;

11:46:07 AM. amb fills: 2

/ UM3. 8/28/2006 11:46:16 AM

Case 1; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_Flow_volume.001.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
4.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	0.89	30.0	28.0	1.0

Simulation:

Froude number: 64.08; effleunt density (sigma-T) 18.67; effleunt velocity 4.81(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	2.402E-5	4.0	15.0	30.0	4.81	1.0	0.0	0.0	0.0;	
26	45.86	2.511E-5	6.62	15.03	32.59	2.875	1.67	0.534	9.796E-7	0.0473;	stream limit reached;
100	44.64	3.462E-5	28.57	15.84	35.54	0.667	7.21	4.947	9.247E-5	1.35;	
172	38.3	6.117E-5	115.7	24.47	36.23	0.169	29.99	22.39	0.00276	22.77;	acute zone;
185	35.25	6.944E-5	148.3	26.19	36.27	0.133	38.79	28.72	0.00499	37.27;	trap level;
194	34.18	7.301E-5	165.9	20.04	36.28	0.117	42.1	31.16	0.00606	43.81;	begin overlap;
200	33.97	7.365E-5	170.6	16.49	36.28	0.113	42.8	31.82	0.00637	45.66;	
229	33.63	7.466E-5	180.9	-0.298	36.29	0.104	44.36	34.12	0.00749	52.29;	local maximum rise or
											fall;
275	34.74	7.178E-5	184.2	-26.17	36.29	0.108	47.64	38.15	0.00959	64.46;	end overlap;
285	36.58	6.759E-5	196.9	-29.62	36.3	0.101	52.41	41.43	0.0115	75.33;	trap level;
300	38.52	6.130E-5	229.0	-20.11	36.31	0.0847	58.14	45.57	0.0143	90.5;	
303	38.71	6.075E-5	233.1	-18.36	36.32	0.0827	58.84	46.12	0.0147	92.63;	begin overlap;
335	39.47	5.846E-5	256.9	0.109	36.32	0.0734	62.99	50.76	0.0181	111.4;	local maximum rise or
											fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.52 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.66E-4	6018.2	861.4	100.0	2348.0	0.0	0.0	1.00E-5	3.00E-4
1.12E-4	8891.8	1272.7	200.0	5125.8	0.0	0.0	1.00E-5	3.00E-4

count: 2

;

11:46:20 AM. amb fills: 2

/ UM3. 8/28/2006 11:46:33 AM

Case 1; ambient file C:\Plumes\Proj\00\00_SUM_49ft_Flow_volume.001.db; Diffuser table record 3: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18

7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
2.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	0.22	30.0	28.0	1.0

Simulation:

Froude number: 89.6; effleunt density (sigma-T) 18.67; effleunt velocity 4.756(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	2.0	15.0	30.0	4.756	1.0	0.0	0.0	0.0;
97	45.37	2.891E-5	13.47	15.39	35.49	0.698	6.794	2.311	3.804E-5	0.606; stream limit reached;
100	45.33	2.927E-5	14.3	15.44	35.54	0.658	7.21	2.476	4.388E-5	0.684;
200	38.86	5.966E-5	100.4	25.14	36.32	0.0967	52.2	19.56	0.00418	34.41;
202	38.51	6.063E-5	104.4	25.15	36.32	0.0929	54.31	20.32	0.00457	37.14; trap level;
207	37.56	6.323E-5	115.4	24.62	36.33	0.0838	59.96	22.37	0.00575	45.03; acute zone;
221	35.53	6.931E-5	146.3	16.61	36.35	0.0649	73.5	27.45	0.00934	67.83; begin overlap;
250	35.24	7.020E-5	155.1	-0.335	36.35	0.0601	76.05	29.35	0.0109	77.34; local maximum rise or fall;
290	35.95	6.841E-5	157.8	-22.58	36.35	0.0614	80.55	32.22	0.0134	92.3; end overlap;
300	37.96	6.355E-5	176.0	-26.85	36.36	0.0556	92.18	36.42	0.0176	116.6;
301	38.29	6.266E-5	179.4	-26.76	36.36	0.0544	94.02	37.07	0.0183	120.7; trap level;
314	40.11	5.682E-5	208.5	-18.61	36.37	0.0458	105.3	41.23	0.0232	148.6; begin overlap;
347	40.73	5.496E-5	226.7	0.518	36.37	0.0411	111.2	44.92	0.028	175.4; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 5.76 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
8.94E-5	11187.8	800.9	100.0	2397.4	0.0	0.0	1.00E-5	3.00E-4
6.08E-5	16437.2	1176.7	200.0	5175.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

;

11:46:37 AM. amb fills: 2

Alternative Port Configuration

/ UM3. 8/30/2006 10:23:59 AM

Case 1; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_Multi_Port.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	4.0	22.0	200.0	46.0	8.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	2.402E-5	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.95	4.007E-5	42.81	16.25	35.54	0.667	7.21	7.412	0.000147	2.025;
118	42.84	4.872E-5	60.94	17.49	35.8	0.47	10.29	11.06	0.000359	4.152; merging;
140	38.71	5.967E-5	115.2	22.14	36.03	0.313	15.91	22.46	0.0016	14.33; acute zone;
150	34.31	7.128E-5	162.1	25.23	36.1	0.263	19.4	32.3	0.00321	25.95; trap level;
189	30.64	8.294E-5	254.3	1.906	36.14	0.203	22.75	44.95	0.00595	43.71; begin overlap;
193	30.63	8.299E-5	258.6	-0.389	36.14	0.201	22.93	45.78	0.00615	44.97; local maximum rise or fall;
200	30.7	8.284E-5	264.9	-4.394	36.14	0.199	23.22	47.22	0.00651	47.17;
220	31.49	8.078E-5	276.3	-15.77	36.15	0.199	24.11	51.48	0.00761	53.83; end overlap;
247	36.7	6.934E-5	295.7	-29.23	36.17	0.198	26.73	62.3	0.0107	72.02; trap level;

248 37.83 6.614E-5 304.7 -27.55 36.18 0.191 27.27 64.46 0.0114 75.91; bottom hit;
 264 40.21 5.665E-5 375.5 -17.74 36.19 0.17 28.47 70.16 0.0133 86.43; begin overlap;
 295 41.42 5.305E-5 427.1 0.123 36.2 0.156 29.5 77.84 0.0159 101.2; local maximum rise or
 fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.41 m

conc	dilutn	width	distnce	time						
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
4.63E-4	2160.9	1256.3	100.0	2118.7	0.0	0.0	1.00E-5	3.00E-4		
3.04E-4	3285.0	1909.8	200.0	4896.5	0.0	0.0	1.00E-5	3.00E-4		

count: 2

;

10:24:02 AM. amb fills: 2

/ UM3. 8/30/2006 10:25:27 AM

Case 1; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_Multi_Port.001.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	4.0	22.0	200.0	46.0	8.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	2.402E-5	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;

100	43.95	4.007E-5	42.81	16.25	35.54	0.667	7.21	7.412	0.000147	2.025;
152	38.7	6.009E-5	117.6	22.6	36.12	0.248	20.18	22.43	0.00183	15.67; acute zone;
154	38.31	6.113E-5	122.2	23.05	36.13	0.239	21.0	23.34	0.00201	16.92; merging;
165	34.58	7.078E-5	160.8	25.75	36.19	0.196	26.11	31.38	0.00394	29.64; trap level;
180	32.71	7.711E-5	199.8	15.93	36.21	0.17	28.31	36.03	0.00529	38.05; begin overlap;
200	32.21	7.859E-5	218.9	4.399	36.21	0.159	29.19	38.84	0.00617	43.4;
208	32.17	7.871E-5	223.3	-0.191	36.21	0.157	29.45	39.88	0.00651	45.41; local maximum rise or fall;
250	33.55	7.512E-5	227.9	-24.0	36.22	0.163	31.09	45.72	0.00848	57.06; end overlap;
264	37.1	6.747E-5	243.4	-29.17	36.23	0.156	33.81	52.21	0.0109	71.06; trap level;
271	38.7	6.100E-5	278.3	-24.2	36.24	0.144	35.03	55.43	0.0122	78.4; bottom hit;
285	40.11	5.687E-5	314.6	-16.04	36.25	0.132	36.29	59.3	0.0139	87.52; begin overlap;
300	40.8	5.486E-5	339.9	-7.374	36.25	0.125	37.1	62.64	0.0153	95.64;
313	40.95	5.435E-5	352.6	0.094	36.25	0.123	37.6	65.27	0.0165	102.1; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.08 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
3.51E-4	2847.6	1264.6	100.0	2225.1	0.0	0.0	1.00E-5	3.00E-4	
2.34E-4	4269.8	1896.2	200.0	5002.9	0.0	0.0	1.00E-5	3.00E-4	

count: 2

;

10:25:31 AM. amb fills: 2

/ UM3. 8/30/2006 10:25:39 AM

Case 1; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_Multi_Port.001.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	4.0	22.0	200.0	46.0	8.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	2.402E-5	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;	stream limit reached;
100	43.95	4.007E-5	42.81	16.25	35.54	0.667	7.21	7.412	0.000147	2.025;	
152	38.7	6.009E-5	117.6	22.6	36.12	0.248	20.18	22.43	0.00183	15.67;	acute zone;
168	34.94	7.026E-5	159.3	25.66	36.2	0.185	27.7	30.67	0.00383	28.82;	trap level;
183	33.14	7.591E-5	188.9	16.43	36.23	0.152	31.62	35.07	0.00527	37.5;	begin overlap;
200	32.72	7.715E-5	200.6	6.576	36.23	0.141	32.93	37.13	0.00603	41.91;	
212	32.66	7.737E-5	205.4	-0.313	36.24	0.137	33.59	38.43	0.00653	44.77;	local maximum rise or fall;
255	33.94	7.404E-5	214.2	-24.58	36.25	0.138	36.7	43.57	0.00864	56.63;	end overlap;
266	36.16	6.890E-5	230.3	-28.85	36.26	0.13	40.67	47.73	0.0106	67.33;	trap level;
268	36.79	6.642E-5	240.1	-26.72	36.27	0.123	41.85	48.96	0.0113	70.7;	merging;
278	37.73	6.349E-5	259.1	-20.86	36.27	0.114	43.48	51.1	0.0124	76.76;	begin overlap;
286	38.21	6.210E-5	270.7	-16.22	36.27	0.109	44.27	52.54	0.0132	80.94;	bottom hit;
300	38.68	6.071E-5	284.9	-8.138	36.28	0.103	45.14	54.76	0.0144	87.48;	
315	38.82	6.028E-5	293.9	0.477	36.28	0.101	45.81	56.92	0.0157	93.99;	local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.72 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.96E-4	3377.7	1398.1	100.0	2295.8	0.0	0.0	1.00E-5	3.00E-4
1.99E-4	5021.1	2078.4	200.0	5073.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

;

10:25:42 AM. amb fills: 2

/ UM3. 8/30/2006 10:25:53 AM

Case 1; ambient file C:\Plumes\Proj\00\00_SUM_49ft_Multi_Port.001.db; Diffuser table record 6: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18

7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	4.0	22.0	200.0	46.0	8.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.95	4.007E-5	42.81	16.25	35.54	0.667	7.21	7.412	0.000147	2.025;
152	38.7	6.009E-5	117.6	22.6	36.12	0.248	20.18	22.43	0.00183	15.67; acute zone;
168	34.94	7.026E-5	159.3	25.66	36.2	0.185	27.7	30.67	0.00383	28.82; trap level;
183	33.14	7.591E-5	188.9	16.43	36.23	0.152	31.62	35.07	0.00527	37.5; begin overlap;
200	32.72	7.715E-5	200.6	6.576	36.23	0.141	32.93	37.13	0.00603	41.91;
212	32.66	7.737E-5	205.4	-0.313	36.24	0.137	33.59	38.43	0.00653	44.77; local maximum rise or fall;
255	33.94	7.404E-5	214.2	-24.58	36.25	0.138	36.7	43.57	0.00864	56.63; end overlap;
266	36.16	6.890E-5	230.3	-28.85	36.26	0.13	40.67	47.73	0.0106	67.33; trap level;
277	37.66	6.371E-5	256.5	-21.45	36.27	0.114	43.61	50.9	0.0123	76.2; begin overlap;
287	38.25	6.198E-5	269.2	-15.64	36.28	0.107	44.93	52.69	0.0133	81.43; bottom hit;
300	38.66	6.076E-5	280.1	-8.138	36.28	0.101	46.07	54.7	0.0144	87.48;
315	38.8	6.033E-5	287.9	0.477	36.28	0.0981	47.07	56.81	0.0157	93.99; local maximum rise or fall;

Plumes not merged, Brooks method may be overly conservative.

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.70 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.07E-4	3251.9	1594.0	100.0	2296.8	0.0	0.0	1.00E-5	3.00E-4
2.07E-4	4833.6	2369.2	200.0	5074.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

;

10:25:56 AM. amb fills: 2

Appendix F-2

VP Text Output of Modeling Runs Included in Table 2 of the Modeling Results (Subset of Entire Printout)

SUMMER (UNIFORM DISTRIBUTION)

Case 3; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 26.13; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time

Step	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)	
0	46.0	3.592E-5	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;	
19	45.85	3.756E-5	8.645	15.11	32.02	1.65	1.454	0.543	2.049E-6	0.0885;	stream limit reached;
100	43.77	6.187E-5	42.39	19.83	35.54	0.34	7.21	7.331	0.000436	3.991;	
156	35.16	9.233E-5	116.6	39.29	36.14	0.136	21.84	22.04	0.00596	31.74;	acute zone;
157	34.86	9.254E-5	118.8	39.23	36.15	0.134	22.28	22.41	0.00622	32.84;	trap level;
167	33.33	9.378E-5	137.1	32.8	36.17	0.112	24.56	24.46	0.00773	39.22;	begin overlap;
200	32.45	9.443E-5	154.2	13.56	36.18	0.0928	25.6	26.43	0.00931	45.76;	
224	32.33	9.452E-5	158.5	-0.23	36.18	0.0891	25.9	27.52	0.0102	49.47;	local maximum rise or
fall;											
292	33.95	9.345E-5	150.6	-38.62	36.19	0.106	27.79	31.29	0.0135	62.72;	end overlap;
300	35.08	9.276E-5	153.8	-42.59	36.2	0.107	29.35	32.58	0.0147	67.62;	
303	36.27	9.207E-5	160.6	-42.46	36.21	0.101	30.98	33.87	0.016	72.79;	trap level;
311	37.47	9.098E-5	178.2	-36.66	36.23	0.088	32.7	35.32	0.0175	78.95;	begin overlap;
375	39.2	8.971E-5	213.5	0.377	36.24	0.0661	34.9	39.91	0.0229	99.59;	local maximum rise or
fall;											

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 5.42 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
2.77E-4	3614.2	776.4	100.0	2439.9	0.0	0.0	1.00E-5	3.00E-4	
1.89E-4	5285.2	1135.3	200.0	5217.7	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 5; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 25.16; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	3.592E-5	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0	stream limit reached;
100	43.79	6.173E-5	42.01	20.19	32.09	0.682	7.096	7.235	0.000215	1.97	
160	33.76	9.328E-5	117.0	45.94	35.09	0.285	22.88	22.33	0.00319	16.68	acute zone;
171	29.48	9.622E-5	143.2	47.28	35.34	0.235	28.44	26.32	0.00489	23.64	trap level;
200	13.55	0.000115	265.3	40.07	35.76	0.119	49.65	42.34	0.0166	66.38	
221	8.39	0.000122	333.0	27.79	35.84	0.0889	57.63	49.9	0.0247	93.82	matched energy radial
vel = 0.0736m/s;											
228	7.492	0.000123	349.2	23.73	35.86	0.0835	59.35	51.78	0.027	101.2	begin overlap;
242	6.318	0.000125	373.2	15.65	35.88	0.0763	61.75	55.09	0.0311	114.7	surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of										9.48 m	
conc dilutn width distnce time											
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)											
1.93E-4	5167.7	1096.4	100.0	2311.3	0.0	0.0	1.00E-5	3.00E-4			
1.30E-4	7667.9	1626.9	200.0	5089.1	0.0	0.0	1.00E-5	3.00E-4			
count: 2											

/ UM3.

Case 6; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 6: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3

13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	28.0	1.0

Simulation:

Froude number: 30.3; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	3.592E-5	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.85	6.103E-5	42.34	18.66	33.47	0.676	7.141	7.306	0.000217	1.992;
155	36.03	9.173E-5	115.1	37.87	35.44	0.273	21.19	22.02	0.00291	15.72; acute zone;
165	32.7	9.401E-5	136.8	40.83	35.61	0.234	25.83	25.97	0.00438	21.96; trap level;
200	25.59	9.918E-5	219.0	21.56	35.82	0.133	37.06	36.66	0.0102	44.76;
222	24.43	0.0001	247.9	9.026	35.86	0.114	40.66	40.99	0.0132	56.03; begin overlap;
238	24.2	0.0001	263.1	-0.17	35.89	0.107	42.82	44.04	0.0155	64.53; local maximum rise or fall;
300	27.65	9.789E-5	277.4	-35.61	35.95	0.113	49.92	54.44	0.0244	96.63;
304	28.21	9.751E-5	277.8	-37.85	35.96	0.114	50.72	55.18	0.0251	99.13; end overlap;
324	34.6	9.355E-5	295.7	-47.64	36.01	0.115	59.16	61.6	0.0318	122.7; trap level;
327	35.75	9.219E-5	316.1	-43.27	36.02	0.103	60.69	62.74	0.0331	127.3; begin overlap;
400	36.88	9.134E-5	375.4	-0.931	36.02	0.0749	61.02	65.11	0.0359	136.9;
402	36.88	9.134E-5	375.5	0.216	36.02	0.0748	61.03	65.16	0.0359	137.1; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.54 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.00E-4	5002.1	1080.3	100.0	2226.1	0.0	0.0	1.00E-5	3.00E-4
1.33E-4	7499.3	1619.7	200.0	5003.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 7; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 7: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13

3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effluent density (sigma-T) 18.67; effluent velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	3.592E-5	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.95	5.991E-5	42.81	16.25	35.54	0.667	7.21	7.412	0.00022	2.025;
152	38.68	8.995E-5	117.5	22.81	36.12	0.248	20.18	22.41	0.0028	15.65; acute zone;
168	34.9	9.253E-5	159.3	25.61	36.2	0.185	27.7	30.63	0.00584	28.77; trap level;
183	33.16	9.391E-5	188.4	16.33	36.23	0.153	31.52	34.92	0.00791	37.21; begin overlap;
200	32.75	9.422E-5	199.9	6.475	36.23	0.142	32.82	36.98	0.00901	41.6;
212	32.69	9.427E-5	204.7	-0.414	36.24	0.138	33.47	38.27	0.00972	44.43; local maximum rise or fall;
254	33.9	9.348E-5	213.2	-24.13	36.25	0.139	36.46	43.24	0.0126	55.86; end overlap;
266	36.28	9.207E-5	230.7	-28.68	36.26	0.129	40.74	47.73	0.0156	67.36; trap level;
277	37.74	9.079E-5	256.8	-21.19	36.27	0.113	43.62	50.85	0.0179	76.11; begin overlap;
300	38.71	9.007E-5	279.9	-7.871	36.28	0.101	46.01	54.59	0.0209	87.22;
314	38.83	8.997E-5	287.0	0.172	36.28	0.0984	46.91	56.53	0.0225	93.17; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.29 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.34E-4	4274.2	917.7	100.0	2299.1	0.0	0.0	1.00E-5	3.00E-4
1.57E-4	6351.3	1363.7	200.0	5076.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 8; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.000.db; Diffuser table record 8: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -30.66; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	3.592E-5	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	40.54	8.869E-5	44.44	41.87	39.69	0.63	7.349	5.684	0.000306	2.143;
165	33.93	9.339E-5	118.5	11.17	37.84	0.207	16.95	16.5	0.00311	14.17; begin overlap;
185	33.77	9.351E-5	127.2	-0.331	37.76	0.192	17.99	18.25	0.0038	16.88; local maximum rise or fall;
200	33.88	9.345E-5	131.1	-8.905	37.71	0.187	18.64	19.49	0.00431	18.88;
228	34.67	9.291E-5	136.4	-24.77	37.61	0.188	20.22	22.01	0.00542	23.2; acute zone;
230	34.77	9.285E-5	136.9	-25.9	37.6	0.188	20.39	22.22	0.00552	23.57; end overlap;
287	47.45	2.607E-5	181.2	-57.34	37.11	0.183	34.98	34.18	0.0131	51.98; bottom hit;
300	56.71	-8.282E-5	217.9	-62.08	36.96	0.163	45.25	39.48	0.0173	70.85;
311	66.36	-0.000196	263.6	-63.41	36.87	0.137	56.26	44.38	0.0198	92.98; trap level;
330	79.31	-0.00036	383.6	-53.76	36.79	0.0821	71.13	51.7	0.0177	134.8; begin overlap;
400	83.55	-0.000414	511.8	-12.89	36.78	0.0483	73.33	56.89	0.0123	168.1;

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423      83.65-0.000415      519.4      0.32      36.78      0.047      73.4      57.85      0.0112      174.3; local maximum rise or
fall;
500      81.63-0.000392      446.1      44.01      36.78      0.0649      73.99      61.88      0.00661      200.5;
526      77.24-0.000342      398.3      58.38      36.77      0.0852      77.31      65.21      0.00221      222.6; end overlap;
542      64.22-0.000201      415.5      65.54      36.73      0.0904      92.23      71.63      -0.0118      270.7; trap level;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of      10.55 m
conc dilutn width distnce time
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
1.39E-4 7218.0 1141.5 100.0 2171.3 0.0 0.0 1.00E-5 3.00E-4
9.18E-5 10896.9 1723.4 200.0 4949.1 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 9; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.000.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

```

Froude number:      37.74; effleunt density (sigma-T)      0.034; effleunt velocity      7.205(m/s);
Depth Amb-cur      P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn      Time
Step (ft) (m/s) (in) (deg) (psu) (m/s) ( ) (ft) (ft) (s)
0      46.0 3.592E-5      6.0      15.0      5.0      7.205      1.0      0.0      0.0      0.0; stream limit reached;

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100  43.92 6.022E-5  42.35  17.37  32.09  1.007  7.096  7.299 0.000145  1.329;
154  37.26 9.090E-5  116.8   31.4  34.95  0.386  20.63  22.33 0.00194  10.63; acute zone;
172  31.34 9.493E-5  160.5  37.43  35.38  0.291  29.46  30.58 0.00416  19.95; trap level;
200  18.41 0.000108  288.0   27.2  35.77  0.153  49.87  50.31 0.0137   55.6;
232  14.04 0.000114  372.7   8.587  35.87  0.113  60.87  63.14 0.023   87.62; begin overlap;
247  13.74 0.000115  394.1  -0.034  35.9  0.106  63.91  67.42 0.0266  99.62; local maximum rise or
fall;
291  16.75 0.000111  428.4  -25.05  35.95  0.103  72.86  79.98 0.0383  138.0; end overlap;
300  18.48 0.000109  436.2  -30.09  35.97  0.104  75.91  83.23 0.0416  148.9;
325  32.69 9.507E-5  503.6  -42.67  36.04  0.0962  96.18  101.3 0.0635  218.4; trap level;
326  34.01 9.427E-5  514.4  -40.55  36.05  0.0913  98.1  102.8 0.0657  225.2; matched energy radial
vel = 0.0288m/s;
328  34.5 9.311E-5  535.8  -37.58  36.05  0.087  98.71  103.4 0.0665  227.9; begin overlap;
393  35.26 9.247E-5  610.4   0.278  36.05  0.0688  98.84  105.3 0.0692  236.4; local maximum rise or
fall;

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Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.50 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
1.58E-4	6342.3	1374.8	100.0	1886.0	0.0	0.0	1.00E-5	3.00E-4	
1.00E-4	9973.1	2161.8	200.0	4663.8	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 10; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 10: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 45.45; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	3.592E-5	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0	stream limit reached;
100	43.94	5.996E-5	42.56	16.66	33.47	1.003	7.141	7.35	0.000146	1.339	
152	38.3	9.020E-5	115.4	26.23	35.38	0.382	19.97	22.01	0.00182	10.2	acute zone;
170	33.25	9.363E-5	159.9	32.11	35.69	0.284	28.52	30.77	0.00405	19.71	trap level;
200	26.98	9.821E-5	243.8	15.9	35.87	0.176	40.57	43.73	0.00923	39.88	
222	26.06	9.890E-5	275.9	3.228	35.91	0.153	44.98	49.21	0.012	50.35	begin overlap;
228	26.03	9.893E-5	282.4	-0.214	35.92	0.149	45.98	50.55	0.0128	53.05	local maximum rise or fall;
269	28.05	9.759E-5	311.3	-23.56	35.96	0.141	52.83	59.62	0.0183	72.97	end overlap;
296	34.64	9.350E-5	342.9	-37.44	36.02	0.137	63.19	69.72	0.0256	99.05	trap level;
299	35.79	9.217E-5	362.9	-33.37	36.03	0.126	64.92	71.35	0.027	103.8	begin overlap;
300	35.85	9.210E-5	365.2	-32.72	36.03	0.125	64.96	71.45	0.027	104.0	
357	36.93	9.130E-5	403.4	0.222	36.03	0.104	65.57	74.85	0.0298	113.9	local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.25 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.94E-4	5149.5	1112.2	100.0	2144.0	0.0	0.0	1.00E-5	3.00E-4
1.28E-4	7801.9	1685.0	200.0	4921.8	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 11; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_UNIa.000.db; Diffuser table record 11: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13
3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17

9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 78.38; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	3.592E-5	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.98	5.954E-5	42.88	15.56	35.54	0.997	7.21	7.426	0.000147	1.354;
151	39.45	8.943E-5	116.8	18.57	36.12	0.369	19.79	22.27	0.00181	10.25; acute zone;
172	35.19	9.234E-5	175.7	20.84	36.22	0.247	29.99	34.01	0.00483	23.22; trap level;
200	32.64	9.430E-5	230.7	4.908	36.26	0.184	37.85	43.37	0.00836	37.3; begin overlap;
209	32.58	9.435E-5	238.6	-0.26	36.26	0.177	39.05	45.0	0.00908	40.07; local maximum rise or fall;
239	33.47	9.377E-5	256.8	-17.27	36.27	0.169	42.97	50.43	0.0116	49.88; end overlap;
254	36.22	9.212E-5	283.5	-23.38	36.29	0.154	48.92	57.13	0.0153	63.5; trap level;
266	37.73	9.079E-5	315.3	-15.33	36.29	0.136	52.63	61.42	0.0179	73.12; begin overlap;
293	38.5	9.020E-5	344.4	0.23	36.3	0.123	56.32	67.19	0.0216	87.03; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.75 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.11E-4	4733.1	1015.9	100.0	2208.9	0.0	0.0	1.00E-5	3.00E-4
1.41E-4	7111.3	1526.4	200.0	4986.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 12; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.000.db; Diffuser table record 12: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.35	28.92	0.0	0.0	0.000134	90.0	0.0003	23.13

3.048	0.00012	90.0	36.35	28.92	0.0	0.0	0.00012	90.0	0.0003	23.13
3.962	0.000116	90.0	36.35	28.91	0.0	0.0	0.000116	90.0	0.0003	23.13
4.877	0.000112	90.0	36.35	28.85	0.0	0.0	0.000112	90.0	0.0003	23.15
6.096	0.000106	90.0	36.36	28.78	0.0	0.0	0.000106	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.000099	90.0	36.24	28.56	0.0	0.0	0.000099	90.0	0.0003	23.17
9.144	0.0000962	90.0	36.29	28.5	0.0	0.0	0.0000962	90.0	0.0003	23.22
10.06	0.0000941	90.0	36.38	28.13	0.0	0.0	0.0000941	90.0	0.0003	23.41
10.97	0.000092	90.0	36.41	25.88	0.0	0.0	0.000092	90.0	0.0003	24.16
12.7	0.000088	90.0	36.47	25.57	0.0	0.0	0.000088	90.0	0.0003	24.3
13.11	0.0000718	90.0	36.42	25.33	0.0	0.0	0.0000737	90.0	0.0003	24.34
14.02	0.0000359	90.0	36.43	25.05	0.0	0.0	0.0000418	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -45.99; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	3.592E-5	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;	stream limit reached;
100	40.5	8.872E-5	43.82	43.68	39.69	0.972	7.349	5.594	0.000199	1.398;	
183	29.55	9.645E-5	157.0	10.85	37.47	0.235	22.45	21.83	0.0039	16.32;	begin overlap;
185	29.5	9.648E-5	158.5	9.704	37.46	0.232	22.62	22.08	0.00399	16.65;	acute zone;
200	29.34	9.661E-5	167.3	1.091	37.41	0.219	23.68	23.85	0.00463	19.07;	
202	29.34	9.661E-5	168.3	-0.0548	37.4	0.218	23.81	24.07	0.00472	19.39;	local maximum rise or fall;
254	31.08	9.545E-5	181.9	-29.66	37.25	0.216	27.56	30.14	0.00721	28.52;	end overlap;
295	42.86	8.204E-5	236.6	-47.89	36.97	0.187	41.26	42.25	0.0141	52.9;	trap level;
300	46.63	3.772E-5	263.7	-46.45	36.92	0.165	45.55	45.73	0.0166	61.89;	bottom hit;
322	53.97	-5.761E-5	350.6	-33.23	36.84	0.114	54.47	54.21	0.023	87.05;	begin overlap;
380	56.97	-9.548E-5	412.8	0.311	36.82	0.0888	58.35	63.28	0.0293	117.4;	local maximum rise or fall;
400	56.69	-9.237E-5	413.5	11.74	36.81	0.0897	59.02	65.84	0.031	126.3;	
452	51.61	-3.396E-5	394.7	41.08	36.78	0.107	64.12	74.95	0.0367	159.0;	end overlap;
473	40.17	8.811E-5	427.7	50.45	36.73	0.106	76.93	85.16	0.0428	201.4;	trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.86 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.72E-4	5804.1	1132.6	100.0	2056.8	0.0	0.0	1.00E-5	3.00E-4
1.12E-4	8898.2	1736.4	200.0	4834.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 23; ambient file C:\Plumes\Proj\00\00_SUM_49ft_UNIa.001.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.35	28.92	0.0	0.0	0.067	90.0	0.0003	23.13
3.048	0.0601	90.0	36.35	28.92	0.0	0.0	0.0601	90.0	0.0003	23.13
3.962	0.058	90.0	36.35	28.91	0.0	0.0	0.058	90.0	0.0003	23.13
4.877	0.0559	90.0	36.35	28.85	0.0	0.0	0.0559	90.0	0.0003	23.15
6.096	0.0531	90.0	36.36	28.78	0.0	0.0	0.0531	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0495	90.0	36.24	28.56	0.0	0.0	0.0495	90.0	0.0003	23.17
9.144	0.0481	90.0	36.29	28.5	0.0	0.0	0.0481	90.0	0.0003	23.22
10.06	0.047	90.0	36.38	28.13	0.0	0.0	0.047	90.0	0.0003	23.41
10.97	0.046	90.0	36.41	25.88	0.0	0.0	0.046	90.0	0.0003	24.16
12.7	0.044	90.0	36.47	25.57	0.0	0.0	0.044	90.0	0.0003	24.3
13.11	0.0359	90.0	36.42	25.33	0.0	0.0	0.0359	90.0	0.0003	24.34
14.02	0.018	90.0	36.43	25.05	0.0	0.0	0.018	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 78.38; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.018	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.07	0.0293	42.88	15.53	35.54	0.997	7.21	7.111	0.0692	1.283;
160	39.4	0.0447	139.0	18.76	36.17	0.311	23.64	22.34	1.044	11.41; acute zone;
185	35.47	0.0461	224.9	20.62	36.27	0.195	38.79	33.0	2.817	26.08; trap level;
198	33.92	0.0467	274.1	13.88	36.29	0.159	46.46	37.61	3.94	34.79; begin overlap;
200	33.83	0.0467	278.2	12.71	36.29	0.156	47.03	37.99	4.042	35.57;
223	33.46	0.0469	303.0	-0.557	36.3	0.143	50.6	41.3	4.988	42.73; local maximum rise or fall;
259	34.74	0.0465	329.8	-20.48	36.31	0.136	57.36	46.93	6.762	55.99; end overlap;
266	36.08	0.046	359.6	-21.96	36.32	0.125	63.77	50.04	7.9	64.35; trap level;
269	36.56	0.0458	377.7	-19.84	36.32	0.119	66.44	51.24	8.375	67.82; begin overlap;

300 37.95 0.0453 442.2 -2.208 36.34 0.101 75.97 57.56 11.14 87.8;
 304 37.96 0.0453 446.5 0.0725 36.34 0.0997 76.75 58.25 11.46 90.14; local maximum rise or
 fall;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.34 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.67E-4 6002.6 1225.8 100.0 2275.1 0.0 0.0 1.00E-5 3.00E-4
 1.11E-4 8945.4 1826.8 200.0 5052.9 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 63; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 26.13; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	2.402E-5	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
20	45.84	2.519E-5	8.817	15.12	32.1	1.617	1.483	0.577	1.548E-6	0.0952; stream limit reached;
100	43.77	4.137E-5	42.39	19.84	35.54	0.34	7.21	7.331	0.000292	3.991;

156	35.2	6.948E-5	116.7	39.2	36.14	0.136	21.84	22.1	0.00393	31.87; acute zone;
158	34.58	7.116E-5	121.3	38.93	36.15	0.131	22.73	22.86	0.00428	34.12; trap level;
167	33.31	7.539E-5	137.5	32.82	36.17	0.111	24.64	24.59	0.00515	39.57; begin overlap;
200	32.43	7.796E-5	154.7	13.59	36.18	0.0925	25.68	26.56	0.00624	46.16;
224	32.3	7.834E-5	159.0	-0.207	36.18	0.0888	25.98	27.65	0.00687	49.89; local maximum rise or fall;
293	34.02	7.385E-5	151.1	-39.14	36.19	0.106	28.0	31.54	0.0092	63.62; end overlap;
300	35.06	7.135E-5	154.2	-42.57	36.2	0.107	29.42	32.73	0.00999	68.12;
303	36.25	6.861E-5	161.0	-42.41	36.21	0.101	31.06	34.02	0.0109	73.32; trap level;
311	37.43	6.435E-5	178.6	-36.59	36.23	0.0877	32.76	35.46	0.012	79.43; begin overlap;
375	39.18	5.928E-5	214.1	0.429	36.24	0.066	34.98	40.11	0.0159	100.4; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 5.44 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.76E-4	3619.1	777.4	100.0	2438.2	0.0	0.0	1.00E-5	3.00E-4
1.89E-4	5293.3	1137.0	200.0	5216.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 66; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.000.db; Diffuser table record 6: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
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6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 2.0 15.0 28.0 1.0

Simulation:

Froude number: 30.3; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	2.402E-5	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0	stream limit reached;
100	43.85	4.082E-5	42.34	18.66	33.47	0.676	7.141	7.306	0.000145	1.992	
155	36.04	6.719E-5	115.2	37.8	35.44	0.273	21.19	22.04	0.0019	15.74	acute zone;
165	32.71	7.621E-5	136.8	40.88	35.61	0.234	25.83	25.98	0.00289	21.98	trap level;
200	25.48	9.705E-5	219.8	21.73	35.82	0.132	37.22	36.81	0.0072	45.13	
223	24.22	0.000101	251.0	8.605	35.87	0.112	41.13	41.53	0.00978	57.5	begin overlap;
238	24.02	0.000102	265.0	-0.015	35.89	0.106	43.13	44.38	0.0115	65.52	local maximum rise or fall;
300	27.49	9.206E-5	280.2	-35.46	35.96	0.111	50.38	54.96	0.019	98.47	
305	28.19	9.019E-5	280.6	-38.26	35.96	0.113	51.37	55.89	0.0197	101.6	end overlap;
325	34.94	7.349E-5	300.8	-47.25	36.02	0.112	60.28	62.59	0.0257	126.6	trap level;
327	35.8	6.900E-5	319.8	-43.09	36.02	0.102	61.46	63.48	0.0266	130.3	begin overlap;
400	36.89	6.563E-5	380.1	-0.6	36.02	0.0739	61.78	65.77	0.0288	139.7	
402	36.89	6.563E-5	380.1	0.546	36.02	0.0739	61.78	65.82	0.0289	139.9	local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.66 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.99E-4	5036.8	1087.8	100.0	2220.5	0.0	0.0	1.00E-5	3.00E-4
1.32E-4	7556.7	1632.1	200.0	4998.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 67; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 7: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41

10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 52.25; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	2.402E-5	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0	stream limit reached;
100	43.95	4.007E-5	42.81	16.25	35.54	0.667	7.21	7.412	0.000147	2.025	
152	38.7	6.009E-5	117.6	22.6	36.12	0.248	20.18	22.43	0.00183	15.67	acute zone;
168	34.94	7.026E-5	159.3	25.66	36.2	0.185	27.7	30.67	0.00383	28.82	trap level;
183	33.14	7.591E-5	188.9	16.43	36.23	0.152	31.62	35.07	0.00527	37.5	begin overlap;
200	32.72	7.715E-5	200.6	6.576	36.23	0.141	32.93	37.13	0.00603	41.91	
212	32.66	7.737E-5	205.4	-0.313	36.24	0.137	33.59	38.43	0.00653	44.77	local maximum rise or fall;
255	33.94	7.404E-5	214.2	-24.58	36.25	0.138	36.7	43.57	0.00864	56.63	end overlap;
266	36.16	6.890E-5	230.3	-28.85	36.26	0.13	40.67	47.73	0.0106	67.33	trap level;
277	37.66	6.371E-5	256.5	-21.45	36.27	0.114	43.61	50.9	0.0123	76.2	begin overlap;
300	38.66	6.076E-5	280.1	-8.138	36.28	0.101	46.07	54.7	0.0144	87.48	
315	38.8	6.033E-5	287.9	0.477	36.28	0.0981	47.07	56.81	0.0157	93.99	local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.31 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.34E-4	4281.8	919.3	100.0	2296.8	0.0	0.0	1.00E-5	3.00E-4
1.57E-4	6364.4	1366.5	200.0	5074.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 68; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 8: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13

3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -30.66; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	40.54	5.516E-5	44.44	41.85	39.69	0.629	7.349	5.684	0.000202	2.143;
165	33.92	7.380E-5	118.6	11.15	37.84	0.207	16.97	16.53	0.00208	14.21; begin overlap;
185	33.76	7.430E-5	127.3	-0.354	37.75	0.192	18.01	18.29	0.00256	16.93; local maximum rise or fall;
200	33.87	7.404E-5	131.3	-8.927	37.71	0.187	18.66	19.52	0.00292	18.93;
228	34.67	7.191E-5	136.6	-24.79	37.6	0.188	20.25	22.05	0.00371	23.27; acute zone;
230	34.77	7.165E-5	137.1	-25.92	37.59	0.188	20.42	22.26	0.00378	23.65; end overlap;
287	47.37	1.809E-5	180.9	-57.33	37.11	0.183	34.92	34.16	0.00912	51.88; bottom hit;
300	56.61	-5.463E-5	218.1	-61.9	36.96	0.162	45.17	39.48	0.012	70.79;
310	65.31	-0.000123	259.4	-63.13	36.87	0.139	55.06	43.94	0.0138	90.73; trap level;
330	78.82	-0.000237	382.9	-53.17	36.79	0.0817	70.5	51.67	0.0128	134.2; begin overlap;
400	82.97	-0.000272	507.4	-12.32	36.79	0.0487	72.62	56.88	0.00956	167.3;
422	83.06	-0.000273	514.4	0.318	36.79	0.0475	72.69	57.81	0.00894	173.3; local maximum rise or fall;
500	80.91	-0.000256	440.1	44.56	36.78	0.0661	73.34	62.03	0.00603	200.5;
524	76.8	-0.000225	396.9	57.83	36.77	0.0848	76.46	65.16	0.0035	221.1; end overlap;
541	62.85	-0.000123	418.5	65.12	36.73	0.0888	92.38	72.12	-0.00614	273.0; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.63 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
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1.39E-4 7205.5 1145.9 100.0 2167.1 0.0 0.0 1.00E-5 3.00E-4
 9.19E-5 10884.0 1730.9 200.0 4944.9 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 69; ambient file C:\Plumes\Proj\00\00_SUM_49ft_NONa.000.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

Froude number: 37.74; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	2.402E-5	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.92	4.027E-5	42.35	17.37	32.09	1.007	7.096	7.299	9.667E-5	1.329;
154	37.27	6.388E-5	116.9	31.35	34.95	0.386	20.63	22.34	0.00127	10.63; acute zone;
173	30.94	8.100E-5	163.7	37.47	35.4	0.285	30.05	31.13	0.00289	20.67; trap level;
200	18.23	0.000119	288.2	27.67	35.77	0.153	50.03	50.4	0.0102	55.82;
233	13.63	0.000135	376.7	8.468	35.88	0.112	61.51	63.74	0.0187	89.36; begin overlap;
248	13.33	0.000136	397.7	-0.152	35.9	0.105	64.5	68.01	0.022	101.4; local maximum rise or fall;
292	16.38	0.000127	431.5	-25.17	35.95	0.102	73.43	80.59	0.0332	140.2; end overlap;


```

300    17.89 0.000122   438.4  -29.64   35.97   0.103   76.12   83.46   0.036   149.9;
326    33.19 7.968E-5   511.8  -42.22   36.05   0.0938   97.96  102.8   0.0593   225.4; trap level, matched
energy radial vel = 0.0301m/s;
328    34.27 7.359E-5   535.0  -39.02   36.05   0.088   99.47  104.1   0.061   231.1; begin overlap;
395    35.16 7.043E-5   615.4   0.545   36.06   0.0683   99.66  106.2   0.0639   240.5; local maximum rise or
fall;

```

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.63 m

```

conc dilutn width distance time
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
1.57E-4 6364.8 1379.7 100.0 1878.6 0.0 0.0 1.00E-5 3.00E-4
9.98E-5 10020.1 2172.0 200.0 4656.4 0.0 0.0 1.00E-5 3.00E-4
count: 2

```

/ UM3.

Case 70; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

```

Froude number:      45.45; effleunt density (sigma-T)      7.486; effleunt velocity      7.205(m/s);
  Depth  Amb-cur  P-dia  V-angle  Eff-sal  P-speed  Dilutn  x-posn  y-posn  Time
Step    (ft)    (m/s)  (in)   (deg)   (psu)   (m/s)   ( )    (ft)   (ft)   (s)

```

0	46.0	2.402E-5	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.94	4.009E-5	42.56	16.66	33.47	1.003	7.141	7.35	9.739E-5	1.339;
152	38.31	6.111E-5	115.4	26.15	35.38	0.382	19.97	22.02	0.00119	10.2; acute zone;
170	33.26	7.473E-5	159.9	32.16	35.69	0.284	28.52	30.79	0.00267	19.73; trap level;
200	26.89	9.313E-5	244.5	16.05	35.88	0.175	40.71	43.88	0.00643	40.14;
222	25.95	9.595E-5	277.0	3.373	35.91	0.152	45.16	49.41	0.00861	50.74; begin overlap;
228	25.91	9.608E-5	283.7	-0.0624	35.92	0.148	46.2	50.77	0.00919	53.5; local maximum rise or fall;
269	27.92	9.080E-5	313.0	-23.42	35.96	0.141	53.1	59.9	0.0136	73.66; end overlap;
297	35.18	7.269E-5	349.4	-36.65	36.03	0.132	64.48	70.93	0.0202	102.5; trap level;
299	35.72	6.922E-5	363.5	-33.82	36.03	0.126	65.26	71.71	0.0208	104.8; begin overlap;
300	35.79	6.887E-5	366.2	-33.12	36.03	0.125	65.31	71.81	0.0208	105.1;
358	36.89	6.563E-5	405.6	0.422	36.03	0.104	65.92	75.24	0.0232	115.1; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.30 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.94E-4 5164.1 1115.3 100.0 2140.7 0.0 0.0 1.00E-5 3.00E-4
 1.28E-4 7827.4 1690.5 200.0 4918.5 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 71; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16
13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia P-elev V-angle H-angle Ports AcuteMZ ChrncMZ P-depth Ttl-flo Eff-sal Temp Polutnt
 (in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 3.0 30.0 28.0 1.0

Simulation:

Froude number: 78.38; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.98	3.982E-5	42.88	15.56	35.54	0.997	7.21	7.426	9.847E-5	1.354;
151	39.46	5.806E-5	116.8	18.46	36.12	0.369	19.79	22.28	0.00118	10.25; acute zone;
172	35.22	6.955E-5	175.7	20.87	36.22	0.247	29.99	34.03	0.00316	23.24; trap level;
200	32.61	7.746E-5	231.3	5.033	36.26	0.183	37.95	43.5	0.00561	37.51; begin overlap;
209	32.54	7.768E-5	239.3	-0.135	36.26	0.177	39.16	45.14	0.00611	40.31; local maximum rise or fall;
240	33.5	7.523E-5	258.2	-17.71	36.27	0.168	43.25	50.79	0.00801	50.56; end overlap;
254	36.08	6.914E-5	282.9	-23.64	36.28	0.155	48.82	57.07	0.0105	63.34; trap level;
267	37.72	6.351E-5	316.5	-15.09	36.29	0.136	52.81	61.66	0.0125	73.66; begin overlap;
294	38.46	6.126E-5	345.4	0.463	36.3	0.123	56.49	67.45	0.0152	87.64; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.77 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.11E-4	4739.9	1017.4	100.0	2206.7	0.0	0.0	1.00E-5	3.00E-4
1.40E-4	7123.6	1529.1	200.0	4984.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 72; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.000.db; Diffuser table record 12: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.35	28.92	0.0	0.0	0.00018	90.0	0.0003	23.13
3.048	0.000147	90.0	36.35	28.92	0.0	0.0	0.000147	90.0	0.0003	23.13
3.962	0.000138	90.0	36.35	28.91	0.0	0.0	0.000138	90.0	0.0003	23.13
4.877	0.000128	90.0	36.35	28.85	0.0	0.0	0.000128	90.0	0.0003	23.15
6.096	0.000115	90.0	36.36	28.78	0.0	0.0	0.000115	90.0	0.0003	23.18
7.468	0.0001	90.0	36.38	28.63	0.0	0.0	0.0001	90.0	0.0003	23.25
7.925	0.0000958	90.0	36.24	28.56	0.0	0.0	0.0000958	90.0	0.0003	23.17
9.144	0.0000847	90.0	36.29	28.5	0.0	0.0	0.0000847	90.0	0.0003	23.22
10.06	0.0000764	90.0	36.38	28.13	0.0	0.0	0.0000764	90.0	0.0003	23.41
10.97	0.0000681	90.0	36.41	25.88	0.0	0.0	0.0000681	90.0	0.0003	24.16

13.07	0.000049	90.0	36.47	25.57	0.0	0.0	0.000049	90.0	0.0003	24.3
13.11	0.000048	90.0	36.42	25.33	0.0	0.0	0.0000482	90.0	0.0003	24.34
14.02	0.000024	90.0	36.43	25.05	0.0	0.0	0.0000291	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -45.99; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	2.402E-5	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0	0.0; stream limit reached;
100	40.5	5.526E-5	43.82	43.67	39.69	0.972	7.349	5.594	0.000131	1.398;	
183	29.53	8.598E-5	157.1	10.87	37.47	0.235	22.47	21.86	0.00273	16.36;	begin overlap;
185	29.48	8.611E-5	158.6	9.724	37.46	0.232	22.64	22.11	0.00279	16.69;	acute zone;
200	29.32	8.661E-5	167.5	1.111	37.4	0.218	23.71	23.88	0.00328	19.12;	
202	29.32	8.662E-5	168.5	-0.0355	37.4	0.217	23.84	24.11	0.00334	19.44;	local maximum rise or fall;
254	31.06	8.201E-5	182.2	-29.64	37.25	0.216	27.6	30.19	0.00525	28.6;	end overlap;
296	43.59	4.906E-5	241.4	-48.01	36.96	0.184	42.13	42.97	0.0109	54.67;	trap level;
300	46.63	2.518E-5	263.3	-46.68	36.92	0.166	45.61	45.77	0.0125	61.98;	bottom hit;
322	53.82	3.739E-5	349.2	-33.45	36.84	0.114	54.31	54.01	0.0171	86.42;	begin overlap;
380	56.82	6.264E-5	411.0	0.0871	36.82	0.0892	58.1	62.94	0.0219	116.2;	local maximum rise or fall;
400	56.55	6.067E-5	411.8	11.52	36.81	0.09	58.74	65.46	0.0231	124.9;	
453	51.43	2.129E-5	392.0	41.42	36.79	0.108	63.84	74.59	0.0276	157.5;	end overlap;
474	40.09	5.313E-5	423.6	50.43	36.73	0.106	76.53	84.6	0.0323	198.8;	trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.76 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.72E-4	5798.9	1126.7	100.0	2061.5	0.0	0.0	1.00E-5	3.00E-4
1.12E-4	8884.4	1726.1	200.0	4839.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 82; ambient file C:\Plumes\Proj\00\OO_SUM_49ft_NONa.001.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
------------	----------------	----------------	----------------	--------------	------------------	--------------	-----------------	----------------	---------------------	--------------------

0.0	0.09	90.0	36.35	28.92	0.0	0.0	0.09	90.0	0.0003	23.13
3.048	0.0737	90.0	36.35	28.92	0.0	0.0	0.0737	90.0	0.0003	23.13
3.962	0.0688	90.0	36.35	28.91	0.0	0.0	0.0688	90.0	0.0003	23.13
4.877	0.0639	90.0	36.35	28.85	0.0	0.0	0.0639	90.0	0.0003	23.15
6.096	0.0573	90.0	36.36	28.78	0.0	0.0	0.0573	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0479	90.0	36.24	28.56	0.0	0.0	0.0479	90.0	0.0003	23.17
9.144	0.0424	90.0	36.29	28.5	0.0	0.0	0.0424	90.0	0.0003	23.22
10.06	0.0382	90.0	36.38	28.13	0.0	0.0	0.0382	90.0	0.0003	23.41
10.97	0.034	90.0	36.41	25.88	0.0	0.0	0.034	90.0	0.0003	24.16
13.07	0.0245	90.0	36.47	25.57	0.0	0.0	0.0245	90.0	0.0003	24.3
13.11	0.024	90.0	36.42	25.33	0.0	0.0	0.024	90.0	0.0003	24.34
14.02	0.012	90.0	36.43	25.05	0.0	0.0	0.012	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 45.45; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.012	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.01	0.0198	42.57	16.6	33.47	1.003	7.141	7.138	0.0467	1.291;
158	38.18	0.0308	129.5	26.83	35.5	0.342	22.49	22.13	0.659	11.01; acute zone;
177	33.7	0.0369	182.6	32.52	35.79	0.25	32.76	29.73	1.402	20.38; trap level;
200	29.5	0.0429	264.8	20.8	35.94	0.165	45.19	37.52	2.647	33.95;
204	29.2	0.0434	274.8	18.53	35.95	0.158	46.57	38.35	2.815	35.66; begin overlap;
237	28.24	0.0448	324.2	-0.282	35.99	0.132	53.56	44.04	4.121	48.43; local maximum rise or fall;
294	31.62	0.0404	363.5	-32.25	36.05	0.129	65.94	53.84	6.912	74.16; end overlap;
300	33.0	0.0386	378.0	-35.22	36.07	0.127	70.16	55.77	7.571	80.03;
303	34.17	0.0372	391.3	-35.95	36.08	0.123	73.63	57.28	8.124	84.92; trap level;
306	35.07	0.0355	412.5	-33.08	36.09	0.115	76.37	58.51	8.591	89.03; begin overlap;
363	36.25	0.0337	461.7	0.191	36.1	0.0946	77.78	61.71	9.842	100.0; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.73 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.67E-4	5981.1	1246.2	100.0	2248.7	0.0	0.0	1.00E-5	3.00E-4
1.11E-4	8942.0	1863.2	200.0	5026.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 83; ambient file C:\Plumes\Proj\OO\OO_SUM_49ft_NONa.001.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.35	28.92	0.0	0.0	0.09	90.0	0.0003	23.13
3.048	0.0737	90.0	36.35	28.92	0.0	0.0	0.0737	90.0	0.0003	23.13
3.962	0.0688	90.0	36.35	28.91	0.0	0.0	0.0688	90.0	0.0003	23.13
4.877	0.0639	90.0	36.35	28.85	0.0	0.0	0.0639	90.0	0.0003	23.15
6.096	0.0573	90.0	36.36	28.78	0.0	0.0	0.0573	90.0	0.0003	23.18
7.468	0.05	90.0	36.38	28.63	0.0	0.0	0.05	90.0	0.0003	23.25
7.925	0.0479	90.0	36.24	28.56	0.0	0.0	0.0479	90.0	0.0003	23.17
9.144	0.0424	90.0	36.29	28.5	0.0	0.0	0.0424	90.0	0.0003	23.22
10.06	0.0382	90.0	36.38	28.13	0.0	0.0	0.0382	90.0	0.0003	23.41
10.97	0.034	90.0	36.41	25.88	0.0	0.0	0.034	90.0	0.0003	24.16
13.07	0.0245	90.0	36.47	25.57	0.0	0.0	0.0245	90.0	0.0003	24.3
13.11	0.024	90.0	36.42	25.33	0.0	0.0	0.024	90.0	0.0003	24.34
14.02	0.012	90.0	36.43	25.05	0.0	0.0	0.012	90.0	0.0003	24.43
14.94	0.0	90.0	36.44	24.97	0.0	0.0	0.00001	90.0	0.0003	24.46

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 78.38; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.012	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.04	0.0197	42.88	15.54	35.54	0.997	7.21	7.211	0.0472	1.305;
156	39.51	0.029	128.8	18.54	36.15	0.335	21.84	22.08	0.63	10.74; acute zone;
181	35.32	0.0347	209.1	20.83	36.26	0.208	35.84	33.57	1.77	25.35; trap level;
196	33.56	0.0374	259.8	12.74	36.28	0.166	43.47	38.98	2.598	34.86; begin overlap;
200	33.41	0.0376	266.4	10.41	36.28	0.161	44.37	39.7	2.724	36.26;
219	33.17	0.038	284.8	-0.548	36.29	0.15	47.01	42.48	3.236	41.86; local maximum rise or fall;
255	34.45	0.0363	310.8	-20.59	36.3	0.142	53.25	48.27	4.43	54.54; end overlap;
262	35.77	0.0348	334.8	-23.08	36.31	0.133	58.45	51.36	5.172	62.2; trap level;
266	36.56	0.0334	358.5	-20.22	36.31	0.124	61.84	53.3	5.683	67.39; begin overlap;
300	37.91	0.0314	415.0	-0.691	36.33	0.104	69.39	60.05	7.63	87.04;

302 37.91 0.0314 416.7 0.453 36.33 0.104 69.68 60.39 7.735 88.09; local maximum rise or fall;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.59 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.80E-4	5561.0	1167.5	100.0	2262.3	0.0	0.0	1.00E-5	3.00E-4
1.20E-4	8300.2	1742.5	200.0	5040.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 3; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 3: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-sp (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	22.0	1.0

Simulation:

Froude number: 28.18; effleunt density (sigma-T) 20.46; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
19	45.85	4.511E-5	8.646	15.1	31.96	1.649	1.455	0.543	2.463E-6	0.0886; stream limit reached;

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100      43.8 7.393E-5   42.48   19.29   35.39   0.339   7.214   7.348 0.000525   4.002;
158      34.91 9.302E-5   116.0   42.81   35.97   0.142   22.23   22.3 0.00687    32.4; acute zone;
200      13.97 0.000114   196.3   64.68   36.12   0.11    49.18   36.52 0.0245    96.57;
209      6.898 0.000123   218.8   68.17   36.15   0.106   58.77   39.57 0.0311    118.4; matched energy radial
vel = 0.0698m/s;
216      0.719 0.000132   238.8   70.37   36.16   0.102   67.51   41.88 0.0373    137.9; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.07 m
  conc dilutn width distnce
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
1.49E-4 6713.0 833.5 100.0 2423.2 0.0 0.0 1.00E-5 3.00E-4
1.01E-4 9834.6 1221.2 200.0 5201.0 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 5; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.000.db; Diffuser table record 5: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	22.0	1.0

Simulation:

Froude number: 25.49; effleunt density (sigma-T) 1.618; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.79	7.407E-5	42.04	20.08	31.94	0.682	7.099	7.241	0.000258	1.972;
161	33.92	9.366E-5	115.1	47.07	34.9	0.294	22.66	22.12	0.00349	16.35; acute zone;
200	14.43	0.000113	183.2	67.07	35.61	0.244	47.62	33.86	0.0108	42.95;
211	6.112	0.000124	208.2	71.01	35.74	0.235	59.2	37.0	0.0142	54.27; matched energy radial
vel = 0.167m/s;										
217	1.023	0.000131	223.3	72.83	35.79	0.23	66.67	38.65	0.0165	61.29; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of									5.67 m	
conc dilutn		width	distnce	time						
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		
1.47E-4	6817.7	801.6	100.0	2450.6	0.0	0.0	1.00E-5	3.00E-4		
1.00E-4	9958.2	1170.9	200.0	5228.4	0.0	0.0	1.00E-5	3.00E-4		
count: 2										

/ UM3.

Case 6; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 6: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	22.0	1.0

Simulation:

Froude number: 30.96; effleunt density (sigma-T) 9.156; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.85	7.322E-5	42.36	18.54	33.32	0.676	7.146	7.312	0.000261	1.994;
156	35.86	9.241E-5	115.8	38.9	35.27	0.274	21.44	22.23	0.00336	15.99; acute zone;
200	15.03	0.000112	199.5	62.91	35.82	0.208	48.15	37.97	0.0129	50.98;
210	7.076	0.000123	224.5	67.18	35.9	0.201	58.69	41.62	0.0168	64.07; matched energy radial
vel = 0.133m/s;										
217	0.771	0.000132	243.8	69.7	35.94	0.195	67.42	44.09	0.0201	74.51; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.19 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.51E-4	6631.8	842.0	100.0	2404.5	0.0	0.0	1.00E-5	3.00E-4
1.02E-4	9735.8	1236.1	200.0	5182.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 7; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.000.db; Diffuser table record 7: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-sp d m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia P-elev V-angle H-angle Ports AcuteMZ ChrncMZ P-depth Ttl-flo Eff-sal Temp Polutnt
 (in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 2.0 30.0 22.0 1.0

Simulation:

Froude number: 56.37; effleunt density (sigma-T) 20.46; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.95	7.187E-5	42.84	16.1	35.39	0.667	7.214	7.418	0.000265	2.027;
152	38.71	9.060E-5	117.4	23.16	35.94	0.249	20.19	22.44	0.00322	15.67; acute zone;
200	18.39	0.000107	259.6	46.38	36.13	0.13	51.3	51.13	0.0211	81.86;
211	8.948	0.00012	301.5	52.55	36.15	0.12	63.4	59.11	0.0301	112.2; matched energy radial

vel = 0.0841m/s;

217 2.65 0.000129 326.8 55.65 36.16 0.115 71.37 63.61 0.0363 132.5; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.30 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.63E-4	6144.7	987.7	100.0	2239.2	0.0	0.0	1.00E-5	3.00E-4
1.08E-4	9197.4	1478.5	200.0	5017.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 8; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 8: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41

14.94 0.0 90.0 36.25 21.18 0.0 0.0 0.00001 90.0 0.0003 25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	22.0	1.0

Simulation:

Froude number: -29.84; effleunt density (sigma-T) 43.51; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	4.314E-5	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0	stream limit reached;
100	40.54	8.945E-5	44.5	41.74	39.53	0.628	7.355	5.694	0.00036	2.147	
185	33.31	9.425E-5	137.5	-0.234	37.49	0.177	19.48	20.07	0.00487	19.92	local maximum rise or fall;
187	33.31	9.425E-5	138.6	-1.379	37.48	0.176	19.63	20.3	0.00498	20.32	begin overlap;
200	33.45	9.417E-5	144.7	-8.815	37.42	0.17	20.59	21.76	0.00568	22.91	
203	33.51	9.413E-5	145.8	-10.53	37.41	0.169	20.8	22.09	0.00584	23.52	acute zone;
228	34.43	9.355E-5	153.8	-24.76	37.31	0.167	22.8	24.92	0.00733	28.97	end overlap;
296	47.85	2.422E-5	182.6	-62.94	36.88	0.199	38.22	36.5	0.0157	58.88	bottom hit;
300	50.26	-8.830E-6	188.0	-65.14	36.84	0.201	40.94	37.66	0.0167	62.95	
399	188.1	-0.00196	655.7	-84.01	36.33	0.114	290.5	61.77	-0.356	327.8	trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.65 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
5.03E-5	19899.3	1576.7	100.0	2254.8	0.0	0.0	1.00E-5	3.00E-4
3.36E-5	29728.0	2355.5	200.0	5032.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 9; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.000.db; Diffuser table record 9: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39

7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	22.0	1.0

Simulation:

Froude number: 38.24; effleunt density (sigma-T) 1.618; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.92	7.230E-5	42.37	17.32	31.94	1.006	7.099	7.303	0.000174	1.33;
154	37.26	9.150E-5	116.7	31.71	34.77	0.388	20.64	22.33	0.00221	10.62; acute zone;
200	16.67	0.00011	216.3	57.42	35.61	0.264	47.84	42.14	0.0101	39.88;
211	7.501	0.000122	247.0	63.0	35.74	0.252	59.48	47.31	0.0138	52.37; matched energy radial
vel = 0.173m/s;										
217	1.767	0.00013	265.2	65.62	35.8	0.246	66.98	50.03	0.0163	60.16; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.74 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)
1.58E-4	6339.3	881.2	100.0	2354.1	0.0	0.0	1.00E-5 3.00E-4
1.06E-4	9359.6	1301.0	200.0	5131.9	0.0	0.0	1.00E-5 3.00E-4

count: 2

/ UM3.

Case 10; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39

4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	22.0	1.0

Simulation:

Froude number: 46.43; effleunt density (sigma-T) 9.156; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.94	7.198E-5	42.58	16.6	33.32	1.002	7.146	7.354	0.000175	1.34;
152	38.31	9.085E-5	115.4	26.44	35.2	0.383	19.98	22.03	0.0021	10.2; acute zone;
200	17.87	0.000108	234.7	52.08	35.82	0.228	48.8	46.19	0.0117	46.03;
211	8.692	0.000121	268.9	58.19	35.9	0.215	60.34	52.5	0.0163	61.41; matched energy radial
vel = 0.139m/s;										
218	1.641	0.00013	293.0	61.69	35.95	0.208	69.3	56.53	0.0199	73.13; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.44 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.59E-4	6270.8	930.5	100.0	2299.2	0.0	0.0	1.00E-5	3.00E-4
1.07E-4	9318.1	1382.7	200.0	5077.0	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 11; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.000.db; Diffuser table record 11: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38

2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	22.0	1.0

Simulation:

Froude number: 84.55; effleunt density (sigma-T) 20.46; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.98	7.147E-5	42.9	15.49	35.39	0.997	7.214	7.431	0.000177	1.354;
151	39.47	9.013E-5	116.8	18.66	35.94	0.369	19.8	22.29	0.00209	10.25; acute zone;
200	22.4	0.000102	288.4	34.38	36.13	0.161	52.24	56.95	0.0168	64.86;
214	10.84	0.000118	361.3	41.96	36.16	0.135	68.81	71.49	0.0282	103.8; matched energy radial
	vel = 0.094m/s;									
220	4.651	0.000126	393.7	45.25	36.17	0.128	77.08	77.91	0.0346	124.6; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.00 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.65E-4	6066.0	1087.6	100.0	2118.1	0.0	0.0	1.00E-5	3.00E-4
1.08E-4	9222.1	1653.6	200.0	4895.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 12; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 12: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
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m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	22.0	1.0

Simulation:

Froude number: -44.76; effleunt density (sigma-T) 43.51; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	4.314E-5	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	40.5	8.947E-5	43.86	43.63	39.53	0.972	7.355	5.6	0.000234	1.4;
164	28.43	9.736E-5	155.7	23.54	37.29	0.244	23.13	22.06	0.00424	16.75; acute zone;
200	26.61	9.862E-5	201.1	2.816	37.1	0.182	28.5	29.52	0.00745	28.15;
205	26.59	9.863E-5	205.4	-0.0508	37.08	0.178	29.09	30.39	0.00787	29.63; local maximum rise or fall;
207	26.6	9.863E-5	207.1	-1.197	37.07	0.177	29.33	30.74	0.00804	30.22; begin overlap;
248	28.25	9.760E-5	229.8	-24.58	36.96	0.167	34.05	37.64	0.0118	43.09; end overlap;
300	38.73	9.098E-5	253.6	-53.87	36.77	0.189	46.61	49.28	0.0198	70.3;
315	47.48	3.298E-5	271.8	-62.2	36.68	0.198	56.19	54.6	0.0245	86.39; bottom hit;
394	182.1	-0.00187	727.2	-81.14	36.34	0.127	264.7	86.31	-0.231	334.3; trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 18.47 m

conc	dilutn	width	distnce	time
(kg/kg)	(m)	(m)	(m)	(hrs)
5.99E-5	16689.9	1609.6	100.0	2047.0
3.90E-5	25622.1	2471.0	200.0	4824.8

count: 2

/ UM3.

Case 23; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.001.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	22.0	1.0

Simulation:

Froude number: 84.55; effleunt density (sigma-T) 20.46; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.018	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.07	0.0293	42.9	15.46	35.39	0.997	7.214	7.115	0.0692	1.284;
159	39.54	0.0447	136.4	18.82	35.98	0.318	23.2	21.99	1.001	11.04; acute zone;
200	31.59	0.0474	292.5	27.23	36.13	0.156	52.24	40.4	4.761	40.98;
234	19.01	0.0535	511.3	35.95	36.19	0.101	102.4	58.4	13.19	100.5; matched energy radial
vel = 0.0563m/s;										
235	18.58	0.0538	519.2	36.08	36.19	0.0994	104.5	58.89	13.52	102.7; matched energy radial
vel = 0.0579m/s;										
238	17.28	0.0547	543.5	36.42	36.19	0.0963	110.9	60.32	14.55	109.6; matched energy radial
vel = 0.0631m/s;										

253 10.76 0.0592 675.0 37.04 36.21 0.0843 149.2 66.82 20.32 146.7; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.14 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.00E-4 9967.9 1582.9 100.0 2186.5 0.0 0.0 1.00E-5 3.00E-4
 6.66E-5 15019.1 2385.1 200.0 4964.3 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 63; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	22.0	1.0

Simulation:

Froude number: 28.18; effleunt density (sigma-T) 20.46; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	2.402E-5	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
20	45.84	2.519E-5	8.819	15.1	32.04	1.617	1.484	0.578	1.549E-6	0.0953; stream limit reached;
100	43.8	4.117E-5	42.48	19.29	35.39	0.339	7.214	7.349	0.000292	4.003;

```

157    35.19 6.957E-5    114.5    42.25    35.97    0.143    21.84    22.0    0.00386    31.51; acute zone;
200    13.96 0.000132    196.3    64.68    36.12    0.11    49.18    36.53    0.0169    96.58;
209    6.895 0.000155    218.8    68.17    36.15    0.106    58.77    39.57    0.0228    118.4; matched energy radial
vel = 0.0698m/s;
216    0.722 0.000175    238.8    70.36    36.16    0.102    67.51    41.88    0.0286    137.8; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.07 m
conc dilutn width distnce time
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
1.49E-4 6713.0 833.6 100.0 2423.1 0.0 0.0 1.00E-5 3.00E-4
1.01E-4 9834.7 1221.2 200.0 5200.9 0.0 0.0 1.00E-5 3.00E-4
count: 2

```

/ UM3.

Case 65; ambient file C:\Plumes\Proj\00\00_WINT_49ft_NONa.000.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	22.0	1.0

Simulation:

Froude number: 25.49; effleunt density (sigma-T) 1.618; effleunt velocity 4.804(m/s);
Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time

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Step      (ft)      (m/s)      (in)      (deg)      (psu)      (m/s)      ( )      (ft)      (ft)      (s)
0         46.0 2.402E-5      6.0       15.0       5.0       4.804      1.0       0.0       0.0       0.0; stream limit reached;
100      43.79 4.124E-5      42.04     20.08     31.94     0.682      7.099     7.241 0.000144 1.972;
161      33.92 7.304E-5      115.1     47.07     34.9      0.294      22.66     22.13 0.00205 16.35; acute zone;
200      14.42 0.000131     183.2     67.07     35.61     0.244      47.62     33.87 0.00745 42.95;
211      6.112 0.000157     208.2     71.01     35.74     0.235      59.2      37.0   0.0105 54.27; matched energy radial
vel = 0.167m/s;
217      1.024 0.000174     223.3     72.83     35.79     0.23       66.67     38.65 0.0127 61.29; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 5.67 m
  conc dilutn width distnce time
  (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
1.47E-4 6817.7 801.6 100.0 2450.6 0.0 0.0 1.00E-5 3.00E-4
1.00E-4 9958.1 1170.9 200.0 5228.3 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 66; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 6: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	22.0	1.0

Simulation:

Froude number: 30.96; effleunt density (sigma-T) 9.156; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.85	4.077E-5	42.36	18.54	33.32	0.676	7.146	7.313	0.000145	1.994;
156	35.86	6.774E-5	115.8	38.9	35.27	0.274	21.44	22.23	0.00194	16.0; acute zone;
200	15.03	0.000129	199.5	62.91	35.82	0.208	48.15	37.98	0.00881	50.98;
210	7.073	0.000154	224.5	67.18	35.9	0.201	58.69	41.63	0.0122	64.07; matched energy radial
vel = 0.133m/s;										
217	0.771	0.000174	243.9	69.7	35.94	0.195	67.42	44.09	0.0154	74.51; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.19 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.51E-4	6631.9	842.0	100.0	2404.5	0.0	0.0	1.00E-5	3.00E-4
1.02E-4	9736.0	1236.1	200.0	5182.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 67; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 7: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
-------	--------	---------	---------	-------	---------	---------	---------	---------	---------	------	---------

(in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 2.0 30.0 22.0 1.0

Simulation:

Froude number: 56.37; effleunt density (sigma-T) 20.46; effleunt velocity 4.804(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time
 Step (ft) (m/s) (in) (deg) (psu) (m/s) () (ft) (ft) (s)
 0 46.0 2.402E-5 6.0 15.0 30.0 4.804 1.0 0.0 0.0 0.0; stream limit reached;
 100 43.95 4.002E-5 42.84 16.1 35.39 0.667 7.214 7.419 0.000148 2.027;
 152 38.71 6.004E-5 117.4 23.16 35.94 0.249 20.19 22.44 0.00183 15.68; acute zone;
 200 18.38 0.000118 259.6 46.39 36.13 0.13 51.3 51.14 0.0141 81.88;
 211 8.937 0.000148 301.6 52.55 36.15 0.12 63.41 59.12 0.0216 112.3; matched energy radial
 vel = 0.0842m/s;
 217 2.642 0.000168 326.9 55.65 36.16 0.115 71.38 63.62 0.0273 132.5; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.30 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.63E-4 6145.4 987.8 100.0 2239.1 0.0 0.0 1.00E-5 3.00E-4
 1.08E-4 9198.6 1478.6 200.0 5016.9 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 68; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 8: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	22.0	1.0

Simulation:

Froude number: -29.84; effleunt density (sigma-T) 43.51; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	2.402E-5	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0	stream limit reached;
100	40.54	5.516E-5	44.5	41.74	39.53	0.628	7.355	5.694	0.000202	2.147	
185	33.31	7.556E-5	137.5	-0.236	37.49	0.177	19.47	20.07	0.0031	19.92	local maximum rise or fall;
187	33.31	7.556E-5	138.6	-1.382	37.48	0.176	19.63	20.3	0.00317	20.32	begin overlap;
200	33.45	7.522E-5	144.7	-8.818	37.42	0.17	20.59	21.76	0.00365	22.91	
203	33.51	7.506E-5	145.8	-10.53	37.41	0.169	20.8	22.09	0.00377	23.52	acute zone;
227	34.38	7.273E-5	153.5	-24.2	37.31	0.167	22.7	24.81	0.00476	28.73	end overlap;
296	47.86	1.345E-5	182.6	-62.94	36.88	0.199	38.21	36.51	0.0106	58.89	bottom hit;
300	50.26	-4.955E-6	188.0	-65.14	36.84	0.201	40.94	37.66	0.0113	62.96	
398	186.7	-0.00108	642.7	-84.03	36.33	0.117	284.8	61.63	-0.185	323.0	trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.33 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
5.09E-5	19642.8	1556.3	100.0	2255.9	0.0	0.0	1.00E-5	3.00E-4
3.41E-5	29340.8	2324.6	200.0	5033.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 69; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 9: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4

9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	22.0	1.0

Simulation:

Froude number: 38.24; effleunt density (sigma-T) 1.618; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.92	4.026E-5	42.37	17.32	31.94	1.006	7.099	7.303	9.672E-5	1.33;
154	37.26	6.390E-5	116.7	31.71	34.77	0.388	20.64	22.34	0.00127	10.63; acute zone;
200	16.66	0.000123	216.3	57.42	35.61	0.264	47.84	42.15	0.00681	39.89;
211	7.498	0.000153	247.0	63.0	35.74	0.252	59.48	47.31	0.01	52.37; matched energy radial

vel = 0.173m/s;

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
217	1.765	0.000171	265.3	65.62	35.8	0.246	66.99	50.04	0.0123	60.16; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.74 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.58E-4	6339.5	881.2	100.0	2354.1	0.0	0.0	1.00E-5	3.00E-4
1.06E-4	9359.9	1301.1	200.0	5131.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 70; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.000.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38
3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38

6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	22.0	1.0

Simulation:

Froude number: 46.43; effleunt density (sigma-T) 9.156; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.94	4.008E-5	42.58	16.6	33.32	1.002	7.146	7.355	9.745E-5	1.34;
152	38.31	6.111E-5	115.4	26.44	35.2	0.383	19.98	22.03	0.00119	10.2; acute zone;
200	17.87	0.000119	234.7	52.08	35.82	0.228	48.81	46.2	0.00785	46.03;
211	8.685	0.000149	268.9	58.19	35.9	0.215	60.34	52.5	0.0117	61.42; matched energy radial
vel = 0.139m/s;										
218	1.637	0.000171	293.0	61.69	35.95	0.208	69.31	56.53	0.015	73.13; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.44 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.59E-4	6271.2	930.6	100.0	2299.1	0.0	0.0	1.00E-5	3.00E-4
1.07E-4	9318.8	1382.8	200.0	5076.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 71; ambient file C:\Plumes\Proj\00\00_WINT_49ft_NONa.000.db; Diffuser table record 11: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.00018	90.0	36.26	21.36	0.0	0.0	0.00018	90.0	0.0003	25.38
0.914	0.00017	90.0	36.26	21.35	0.0	0.0	0.00017	90.0	0.0003	25.38
2.134	0.000157	90.0	36.26	21.34	0.0	0.0	0.000157	90.0	0.0003	25.38

3.048	0.000147	90.0	36.26	21.32	0.0	0.0	0.000147	90.0	0.0003	25.39
3.962	0.000138	90.0	36.26	21.31	0.0	0.0	0.000138	90.0	0.0003	25.39
4.877	0.000128	90.0	36.25	21.3	0.0	0.0	0.000128	90.0	0.0003	25.38
6.096	0.000115	90.0	36.25	21.29	0.0	0.0	0.000115	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.0000958	90.0	36.25	21.26	0.0	0.0	0.0000958	90.0	0.0003	25.4
9.144	0.0000847	90.0	36.25	21.25	0.0	0.0	0.0000847	90.0	0.0003	25.4
10.06	0.0000764	90.0	36.25	21.24	0.0	0.0	0.0000764	90.0	0.0003	25.4
10.97	0.0000681	90.0	36.25	21.22	0.0	0.0	0.0000681	90.0	0.0003	25.41
11.89	0.0000598	90.0	36.25	21.21	0.0	0.0	0.0000598	90.0	0.0003	25.41
13.07	0.000049	90.0	36.25	21.2	0.0	0.0	0.000049	90.0	0.0003	25.41
14.02	0.000024	90.0	36.25	21.19	0.0	0.0	0.0000291	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	22.0	1.0

Simulation:

Froude number: 84.55; effleunt density (sigma-T) 20.46; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	2.402E-5	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.98	3.980E-5	42.9	15.49	35.39	0.997	7.214	7.431	9.854E-5	1.355;
151	39.47	5.803E-5	116.8	18.66	35.94	0.369	19.8	22.3	0.00118	10.26; acute zone;
200	22.39	0.000105	288.4	34.38	36.13	0.161	52.24	56.96	0.0111	64.88;
214	10.83	0.000142	361.3	41.96	36.16	0.135	68.81	71.5	0.0203	103.8; matched energy radial

vel = 0.0941m/s;

220 4.648 0.000161 393.7 45.25 36.17 0.128 77.08 77.92 0.0259 124.6; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.00 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.65E-4	6066.2	1087.7	100.0	2118.0	0.0	0.0	1.00E-5	3.00E-4
1.08E-4	9222.5	1653.6	200.0	4895.8	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 82; ambient file C:\Plumes\Proj\00\00_WINT_49ft_NONa.001.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
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0.0	0.09	90.0	36.26	21.36	0.0	0.0	0.09	90.0	0.0003	25.38
0.914	0.0851	90.0	36.26	21.35	0.0	0.0	0.0851	90.0	0.0003	25.38
2.134	0.0786	90.0	36.26	21.34	0.0	0.0	0.0786	90.0	0.0003	25.38
3.048	0.0737	90.0	36.26	21.32	0.0	0.0	0.0737	90.0	0.0003	25.39
3.962	0.0688	90.0	36.26	21.31	0.0	0.0	0.0688	90.0	0.0003	25.39
4.877	0.0639	90.0	36.25	21.3	0.0	0.0	0.0639	90.0	0.0003	25.38
6.096	0.0573	90.0	36.25	21.29	0.0	0.0	0.0573	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0479	90.0	36.25	21.26	0.0	0.0	0.0479	90.0	0.0003	25.4
9.144	0.0424	90.0	36.25	21.25	0.0	0.0	0.0424	90.0	0.0003	25.4
10.06	0.0382	90.0	36.25	21.24	0.0	0.0	0.0382	90.0	0.0003	25.4
10.97	0.034	90.0	36.25	21.22	0.0	0.0	0.034	90.0	0.0003	25.41
11.89	0.0299	90.0	36.25	21.21	0.0	0.0	0.0299	90.0	0.0003	25.41
13.07	0.0245	90.0	36.25	21.2	0.0	0.0	0.0245	90.0	0.0003	25.41
14.02	0.012	90.0	36.25	21.19	0.0	0.0	0.012	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	22.0	1.0

Simulation:

Froude number: 46.43; effleunt density (sigma-T) 9.156; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	0.012	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;	
100	44.01	0.0198	42.59	16.54	33.32	1.002	7.146	7.142	0.0467	1.292;	
158	38.17	0.0308	129.3	27.2	35.32	0.343	22.5	22.13	0.659	11.01; acute zone;	
200	24.94	0.0488	257.4	47.12	35.85	0.2	51.67	39.09	3.07	37.86;	
223	13.46	0.0672	355.5	55.61	35.99	0.166	81.47	47.52	6.04	62.47; matched energy radial	
vel = 0.0914m/s;											
224	12.93	0.068	360.3	55.85	36.0	0.165	83.1	47.84	6.203	63.65; matched energy radial	
vel = 0.0957m/s;											
225	12.4	0.0689	365.3	56.07	36.0	0.164	84.76	48.16	6.369	64.84; matched energy radial	
vel = 0.1m/s;											
240	4.614	0.0816	447.6	57.52	36.07	0.147	114.1	52.31	9.182	83.13; surface;	
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.37 m											
conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	dispersion (kg/kg)	width (s-1)	distnce (m/s)	dispersion (m0.67/s2)			
1.10E-4	9017.7	1242.1	100.0	2328.1	0.0	0.0	1.00E-5	3.00E-4			
7.49E-5	13354.2	1839.4	200.0	5105.9	0.0	0.0	1.00E-5	3.00E-4			
count: 2											

/ UM3.

Case 83; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_NONa.001.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.09	90.0	36.26	21.36	0.0	0.0	0.09	90.0	0.0003	25.38
0.914	0.0851	90.0	36.26	21.35	0.0	0.0	0.0851	90.0	0.0003	25.38
2.134	0.0786	90.0	36.26	21.34	0.0	0.0	0.0786	90.0	0.0003	25.38
3.048	0.0737	90.0	36.26	21.32	0.0	0.0	0.0737	90.0	0.0003	25.39
3.962	0.0688	90.0	36.26	21.31	0.0	0.0	0.0688	90.0	0.0003	25.39
4.877	0.0639	90.0	36.25	21.3	0.0	0.0	0.0639	90.0	0.0003	25.38
6.096	0.0573	90.0	36.25	21.29	0.0	0.0	0.0573	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0479	90.0	36.25	21.26	0.0	0.0	0.0479	90.0	0.0003	25.4
9.144	0.0424	90.0	36.25	21.25	0.0	0.0	0.0424	90.0	0.0003	25.4
10.06	0.0382	90.0	36.25	21.24	0.0	0.0	0.0382	90.0	0.0003	25.4
10.97	0.034	90.0	36.25	21.22	0.0	0.0	0.034	90.0	0.0003	25.41
11.89	0.0299	90.0	36.25	21.21	0.0	0.0	0.0299	90.0	0.0003	25.41
13.07	0.0245	90.0	36.25	21.2	0.0	0.0	0.0245	90.0	0.0003	25.41
14.02	0.012	90.0	36.25	21.19	0.0	0.0	0.012	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	22.0	1.0

Simulation:

Froude number: 84.55; effleunt density (sigma-T) 20.46; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.012	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.04	0.0197	42.9	15.47	35.39	0.997	7.214	7.216	0.0472	1.306;
156	39.52	0.029	128.8	18.79	35.97	0.336	21.86	22.09	0.63	10.74; acute zone;
200	29.98	0.042	293.3	28.83	36.13	0.155	52.24	43.7	3.561	45.04;
232	17.96	0.06	499.1	37.11	36.19	0.101	98.36	60.61	9.724	99.27; matched energy radial
vel = 0.0587m/s;										
233	17.58	0.0607	506.7	37.21	36.19	0.1	100.3	61.05	9.976	101.2; matched energy radial
vel = 0.0602m/s;										
235	16.83	0.0619	521.9	37.37	36.19	0.0982	104.1	61.88	10.48	105.0; matched energy radial
vel = 0.0634m/s;										
248	12.53	0.069	619.3	37.38	36.2	0.088	131.0	66.39	13.81	128.3; begin overlap;

253 11.0 0.0715 655.5 37.08 36.21 0.0854 142.3 67.87 15.19 137.3; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.65 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.04E-4 9607.6 1553.3 100.0 2188.9 0.0 0.0 1.00E-5 3.00E-4
 6.91E-5 14471.7 2339.7 200.0 4966.7 0.0 0.0 1.00E-5 3.00E-4
 count: 2
 / UM3.

Appendix F-3

VP Text Output of Modeling Runs described in Phase 3 of the Modeling Results

Coldwater Upwelling

/ UM3. 9/14/2006 11:07:43 AM

Case 1; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	28.0	1.0

Simulation:

Froude number: 12.33; effleunt density (sigma-T) 0.034; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
20	45.85	4.522E-5	8.781	15.53	15.22	1.62	1.474	0.567	2.728E-6	0.0934; stream limit reached;
100	43.17	8.254E-5	39.76	33.17	31.94	0.383	7.09	6.83	0.000482	3.641;
200	15.19	0.000112	134.5	77.66	35.6	0.225	47.17	20.43	0.0102	41.14;
214	6.883	0.000124	158.4	80.19	35.76	0.214	62.24	22.03	0.0138	52.94; acute zone;
217	4.911	0.000126	164.2	80.66	35.79	0.211	66.04	22.36	0.0148	55.82; matched energy radial
vel = 0.147m/s;										
224	0.0181	0.000133	178.4	81.65	35.85	0.205	75.86	23.11	0.0172	63.08; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 4.53 m										
conc dilutn width distnce time										
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s) (m0.67/s2)										
1.16E-4 8582.5 708.3 100.0 2582.1 0.0 0.0 1.00E-5 3.00E-4										
8.09E-5 12365.2 1020.5 200.0 5359.8 0.0 0.0 1.00E-5 3.00E-4										
count: 2										

/ UM3.

Case 2; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)

6.0 3.0 15.0 0.0 1.0 22.0 200.0 46.0 1.0 15.0 28.0 1.0

Simulation:

Froude number: 14.73; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
20	45.85	4.523E-5	8.795	15.38	21.95	1.619	1.477	0.571	2.748E-6	0.0941; stream limit reached;
100	43.37	7.983E-5	40.78	28.77	33.32	0.365	7.135	7.022	0.000499	3.775;
191	19.38	0.000106	131.1	73.37	35.73	0.2	39.87	22.05	0.0101	41.92; acute zone;
200	14.42	0.000113	145.6	75.69	35.81	0.194	47.65	23.41	0.0124	49.91;
214	5.488	0.000125	171.5	78.64	35.92	0.184	62.86	25.41	0.017	64.71; matched energy radial

vel = 0.12m/s;

221 0.406 0.000132 186.3 79.84 35.96 0.179 72.21 26.36 0.0199 73.41; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 4.73 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.25E-4	8008.0	725.4	100.0	2554.6	0.0	0.0	1.00E-5	3.00E-4
8.64E-5	11569.7	1048.0	200.0	5332.3	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 3; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 3: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 24.14; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
20	45.84	4.524E-5	8.815	15.14	32.04	1.617	1.483	0.577	2.779E-6	0.0952; stream limit reached;
100	43.74	7.479E-5	42.27	20.66	35.39	0.342	7.203	7.306	0.000522	3.974;
162	33.29	9.405E-5	115.2	49.15	35.98	0.151	23.34	22.14	0.00704	32.76; acute zone;
200	13.72	0.000114	183.2	67.78	36.12	0.125	48.76	33.31	0.0212	83.89;
210	6.19	0.000124	206.3	71.19	36.15	0.12	59.43	36.09	0.0273	103.9; matched energy radial
vel = 0.0835m/s;										
216	1.146	0.000131	221.9	72.87	36.16	0.117	66.93	37.71	0.0316	117.5; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 5.64 m										
conc dilutn width distnce time										
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)										
1.46E-4	6869.6	799.6	100.0	2458.5	0.0	0.0	1.00E-5	3.00E-4		
9.97E-5	10025.4	1166.9	200.0	5236.3	0.0	0.0	1.00E-5	3.00E-4		
count: 2										

/ UM3.

Case 4; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 4: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41

11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	28.0	1.0

Simulation:

Froude number: -15.79; effleunt density (sigma-T) 41.53; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	4.314E-5	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0	0.0;
19	45.6	4.860E-5	8.692	44.77	52.55	1.642	1.464	0.406	2.578E-6	0.0905	stream limit reached;
100	40.95	8.922E-5	46.85	30.35	39.6	0.278	7.187	6.016	0.000767	4.573	
153	39.69	9.008E-5	72.6	-0.192	38.6	0.168	10.27	10.16	0.00223	11.05	local maximum rise or
fall;											
154	39.69	9.008E-5	72.9	-0.765	38.59	0.167	10.31	10.22	0.00225	11.16	begin overlap;
196	40.28	8.971E-5	81.07	-24.72	38.26	0.158	12.0	12.71	0.00343	16.07	end overlap;
200	40.41	8.964E-5	81.64	-26.99	38.22	0.158	12.2	12.96	0.00356	16.6	
268	48.52	1.176E-5	98.61	-65.11	37.37	0.191	21.43	19.35	0.00806	34.72	bottom hit;
286	55.97	-9.366E-5	116.8	-73.07	37.04	0.194	30.56	22.1	0.0103	47.25	acute zone;
300	63.02	-0.000194	135.5	-76.95	36.85	0.189	40.33	23.94	0.0109	58.84	
400	169.8	-0.00171	493.8	-86.64	36.33	0.102	292.3	34.47	-0.361	292.3	
404	177.8	-0.00182	532.6	-86.64	36.33	0.0945	316.4	34.93	-0.438	317.4	trap level;
423	219.6	-0.00244	1118.6	-81.5	36.3	0.0278	440.7	38.01	-1.247	530.9	begin overlap;
500	222.9	-0.0025	2752.2	-35.23	36.3	0.00502	442.9	38.87	-1.528	597.8	
562	222.9	-0.0025	3056.2	0.531	36.3	0.0041	442.9	38.97	-1.56	605.5	local maximum rise or
fall;											
600	222.9	-0.0025	2946.5	22.22	36.3	0.00443	442.9	39.02	-1.578	609.8	
700	221.3	-0.00248	1431.9	77.85	36.3	0.0195	443.0	39.62	-1.773	656.2	
713	214.4	-0.0024	1012.3	84.42	36.3	0.0413	454.1	40.46	-2.055	722.8	end overlap;
726	174.2	-0.00185	911.3	86.73	36.29	0.0585	577.8	42.81	-3.042	935.4	trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 23.15 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.73E-5	36702.9	2032.0	100.0	2414.4	0.0	0.0	1.00E-5	3.00E-4
1.86E-5	53821.1	2979.8	200.0	5192.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 5; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.000.db; Diffuser table record 5: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 24.66; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.78	7.425E-5	41.97	20.41	31.94	0.683	7.09	7.225	0.000258	1.967;
162	33.53	9.390E-5	114.8	48.56	34.92	0.299	22.92	22.07	0.00351	16.39; acute zone;
200	14.37	0.000113	180.5	67.72	35.61	0.251	47.52	33.16	0.0105	41.63;
211	6.147	0.000124	205.1	71.55	35.74	0.242	59.08	36.16	0.0138	52.48; matched energy radial
vel = 0.168m/s;										
217	1.119	0.000131	219.9	73.32	35.79	0.237	66.53	37.74	0.0159	59.19; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 5.59 m										
	conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
	1.46E-4	6849.2	794.8	100.0	2458.3	0.0	0.0	1.00E-5	3.00E-4	
	1.00E-4	9995.9	1159.9	200.0	5236.0	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 6; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 6: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	28.0	1.0

Simulation:

Froude number: 29.45; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	4.314E-5	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.84	7.341E-5	42.29	18.88	33.32	0.677	7.135	7.296	0.00026	1.989;
157	35.44	9.268E-5	115.6	40.82	35.29	0.278	21.68	22.2	0.00339	16.06; acute zone;
200	14.84	0.000112	195.3	64.02	35.82	0.217	48.02	36.93	0.0123	48.89;
210	6.989	0.000123	219.6	68.12	35.89	0.209	58.53	40.36	0.016	61.18; matched energy radial
vel = 0.137m/s;										
217	0.785	0.000132	238.5	70.55	35.94	0.204	67.23	42.68	0.0192	70.98; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.06 m
 conc dilutn width distnce time

(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.50E-4 6679.2 831.6 100.0 2416.4 0.0 0.0 1.00E-5 3.00E-4
 1.02E-4 9792.5 1219.2 200.0 5194.2 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 7; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 7: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 48.29; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	4.314E-5	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0; stream limit reached;
100	43.94	7.207E-5	42.77	16.47	35.39	0.668	7.203	7.402	0.000264	2.022;
152	38.39	9.080E-5	116.3	25.57	35.94	0.254	20.16	22.22	0.00318	15.45; acute zone;
200	17.55	0.000109	243.8	50.67	36.13	0.145	50.17	47.9	0.0188	73.43;
211	8.017	0.000122	281.2	56.79	36.15	0.135	62.22	54.8	0.0265	99.22; matched energy radial

vel = 0.0989m/s;

217 1.842 0.00013 303.8 59.73 36.16 0.131 70.07 58.58 0.0317 115.9; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.72 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 1.60E-4 6240.2 949.7 100.0 2281.8 0.0 0.0 1.00E-5 3.00E-4
 1.07E-4 9291.9 1414.1 200.0 5059.6 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 8; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 8: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -31.58; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time
 (ft) (m/s) (in) (deg) (psu) (m/s) () (ft) (ft) (s)
 0 46.0 4.314E-5 6.0 45.0 60.0 4.804 1.0 0.0 0.0 0.0; stream limit reached;
 100 40.54 8.945E-5 44.35 42.09 39.53 0.632 7.343 5.67 0.000358 2.136;

```

188 32.63 9.469E-5 144.7 -0.505 37.43 0.168 20.46 21.16 0.00546 22.07; local maximum rise or
fall;
189 32.64 9.469E-5 145.2 -1.077 37.42 0.168 20.55 21.28 0.00552 22.29; begin overlap;
196 32.68 9.466E-5 148.9 -5.084 37.39 0.164 21.1 22.11 0.00593 23.81; acute zone;
200 32.74 9.463E-5 150.8 -7.371 37.38 0.162 21.4 22.58 0.00617 24.69;
230 33.78 9.398E-5 161.2 -24.46 37.26 0.159 23.85 26.13 0.00812 31.79; end overlap;
298 47.61 2.786E-5 191.1 -62.64 36.86 0.189 39.75 38.2 0.0173 64.4; bottom hit;
300 48.79 1.166E-5 193.7 -63.75 36.84 0.19 41.08 38.79 0.0178 66.52;
395 179.7 -0.00184 634.6 -83.43 36.34 0.113 267.9 63.68 -0.303 326.5; trap level;
400 192.6 -0.00203 706.6 -83.25 36.33 0.0995 295.7 65.18 -0.414 364.3;
414 227.2 -0.00255 1183.6 -77.31 36.32 0.043 368.3 70.29 -0.963 517.4; begin overlap;
500 233.8 -0.00266 2477.2 -26.25 36.31 0.0104 371.9 72.91 -1.304 603.5;
546 233.8 -0.00266 2622.3 0.237 36.31 0.00935 371.9 73.23 -1.344 613.8; local maximum rise or
fall;
600 233.7 -0.00266 2434.9 31.0 36.31 0.0109 371.9 73.6 -1.393 626.1;
689 222.1 -0.00251 1140.6 80.12 36.31 0.0531 382.2 77.07 -1.85 740.7; end overlap;
700 188.1 -0.00206 1027.0 84.04 36.3 0.0743 454.8 81.18 -2.516 892.4;
703 176.2 -0.00189 1074.6 84.06 36.3 0.0704 482.6 82.38 -2.753 942.7; trap level;

```

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 27.30 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.71E-5	26933.4	2105.1	100.0	2079.9	0.0	0.0	1.00E-5	3.00E-4
2.43E-5	41158.7	3216.9	200.0	4857.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 9; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 9: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spdx m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41

11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

Froude number: 37.0; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.92	7.237E-5	42.32	17.47	31.94	1.007	7.09	7.292	0.000173	1.328;
154	37.14	9.158E-5	116.1	32.59	34.77	0.391	20.61	22.22	0.00219	10.55; acute zone;
200	16.45	0.00011	213.2	58.32	35.61	0.271	47.72	41.44	0.00984	38.88;
211	7.349	0.000123	243.3	63.77	35.74	0.259	59.33	46.4	0.0134	50.86; matched energy radial
vel = 0.179m/s;										
217	1.667	0.00013	261.2	66.32	35.8	0.253	66.81	49.02	0.0158	58.32; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 6.63 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.57E-4	6367.4	873.8	100.0	2362.8	0.0	0.0	1.00E-5	3.00E-4
1.06E-4	9391.8	1288.9	200.0	5140.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 10; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4

9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 44.18; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.94	7.205E-5	42.53	16.76	33.32	1.003	7.135	7.343	0.000175	1.337;
153	37.96	9.107E-5	116.9	27.84	35.22	0.38	20.35	22.34	0.00217	10.52; acute zone;
200	17.59	0.000109	229.9	53.43	35.82	0.237	48.5	45.16	0.0113	44.39;
211	8.335	0.000121	263.3	59.47	35.9	0.224	60.13	51.2	0.0157	59.09; matched energy radial

vel = 0.147m/s;

218 1.351 0.000131 286.6 62.86 35.95 0.217 69.07 55.0 0.0191 70.11; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.28 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.58E-4	6312.7	919.6	100.0	2312.1	0.0	0.0	1.00E-5	3.00E-4
1.06E-4	9366.0	1364.4	200.0	5089.9	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 11; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.000.db; Diffuser table record 11: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38
3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38

6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 72.43; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	4.314E-5	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0; stream limit reached;
100	43.98	7.155E-5	42.85	15.66	35.39	0.998	7.203	7.419	0.000177	1.352;
151	39.32	9.022E-5	116.3	19.83	35.94	0.372	19.77	22.19	0.00208	10.19; acute zone;
200	20.83	0.000104	279.8	38.85	36.13	0.171	52.07	55.31	0.016	62.01;
213	10.17	0.000119	337.5	46.17	36.16	0.15	66.47	66.8	0.0249	92.21; matched energy radial

vel = 0.104m/s;

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
219	4.078	0.000127	365.4	49.48	36.17	0.143	74.33	72.26	0.0302	109.3; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.28 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.65E-4	6064.3	1046.6	100.0	2166.0	0.0	0.0	1.00E-5	3.00E-4
1.09E-4	9161.6	1581.1	200.0	4943.8	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 12; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.000.db; Diffuser table record 12: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.000134	90.0	36.26	21.36	0.0	0.0	0.000134	90.0	0.0003	25.38
0.914	0.00013	90.0	36.26	21.35	0.0	0.0	0.00013	90.0	0.0003	25.38
2.134	0.000124	90.0	36.26	21.34	0.0	0.0	0.000124	90.0	0.0003	25.38

3.048	0.00012	90.0	36.26	21.32	0.0	0.0	0.00012	90.0	0.0003	25.39
3.962	0.000116	90.0	36.26	21.31	0.0	0.0	0.000116	90.0	0.0003	25.39
4.877	0.000112	90.0	36.25	21.3	0.0	0.0	0.000112	90.0	0.0003	25.38
6.096	0.000106	90.0	36.25	21.29	0.0	0.0	0.000106	90.0	0.0003	25.39
7.468	0.0001	90.0	36.25	21.27	0.0	0.0	0.0001	90.0	0.0003	25.39
7.925	0.000099	90.0	36.25	21.26	0.0	0.0	0.000099	90.0	0.0003	25.4
9.144	0.0000964	90.0	36.25	21.25	0.0	0.0	0.0000964	90.0	0.0003	25.4
10.06	0.0000945	90.0	36.25	21.24	0.0	0.0	0.0000945	90.0	0.0003	25.4
10.97	0.0000925	90.0	36.25	21.22	0.0	0.0	0.0000925	90.0	0.0003	25.41
11.89	0.0000905	90.0	36.25	21.21	0.0	0.0	0.0000905	90.0	0.0003	25.41
13.07	0.000088	90.0	36.25	21.2	0.0	0.0	0.000088	90.0	0.0003	25.41
14.02	0.0000431	90.0	36.25	21.19	0.0	0.0	0.0000482	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -47.37; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	4.314E-5	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;	stream limit reached;
100	40.5	8.947E-5	43.77	43.77	39.53	0.974	7.343	5.586	0.000233	1.396;	
163	27.96	9.765E-5	156.8	25.56	37.28	0.244	23.48	22.2	0.00433	17.08;	acute zone;
200	25.64	9.925E-5	208.5	4.245	37.07	0.175	29.56	30.54	0.00804	30.19;	
208	25.6	9.928E-5	216.0	-0.343	37.04	0.169	30.56	32.01	0.00879	32.79;	local maximum rise or fall;
209	25.6	9.928E-5	216.8	-0.915	37.04	0.169	30.68	32.19	0.00888	33.12;	begin overlap;
250	27.29	9.823E-5	240.8	-24.3	36.93	0.159	35.61	39.42	0.013	47.25;	end overlap;
300	37.27	9.193E-5	264.0	-52.48	36.76	0.178	47.69	50.93	0.0213	75.15;	
317	47.15	3.805E-5	284.5	-61.92	36.66	0.188	58.49	57.12	0.027	94.5;	bottom hit;
391	174.4	-0.00176	717.6	-80.27	36.35	0.123	249.2	89.0	-0.192	339.8;	trap level;
400	201.8	-0.00215	893.1	-79.16	36.33	0.0925	297.8	93.91	-0.402	419.7;	
410	223.6	-0.0025	1253.1	-73.05	36.32	0.0531	334.9	99.01	-0.712	516.0;	begin overlap;
500	232.5	-0.00264	2319.9	-19.98	36.32	0.0163	339.0	103.8	-1.042	611.4;	
535	232.6	-0.00264	2397.5	0.153	36.32	0.0153	339.0	104.4	-1.081	622.6;	local maximum rise or fall;
600	232.1	-0.00263	2148.6	37.14	36.32	0.0192	339.0	105.5	-1.162	645.8;	
671	217.8	-0.00244	1220.9	76.34	36.32	0.0628	349.8	111.2	-1.56	759.3;	end overlap;
685	171.7	-0.00183	1175.5	81.3	36.31	0.0796	432.6	119.1	-2.292	941.7;	trap level;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 29.86 m
 conc dilutn width distnce time

(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 4.63E-5 21609.5 2061.2 100.0 1769.2 0.0 0.0 1.00E-5 3.00E-4
 2.89E-5 34640.7 3304.2 200.0 4547.0 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 13; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	28.0	1.0

Simulation:

Froude number: 12.33; effleunt density (sigma-T) 0.034; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.018	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	43.58	0.032	40.14	31.13	31.94	0.375	7.09	6.12	0.171	3.185;
200	24.62	0.0498	154.8	70.29	35.65	0.183	50.89	16.93	3.872	34.33;
233	12.05	0.0583	232.3	69.95	35.94	0.156	97.8	19.44	7.486	58.5; matched energy radial

vel = 0.0626m/s;

```

234    11.63  0.0586  235.1  69.86  35.95  0.155  99.76  19.5  7.628  59.4; matched energy radial
vel = 0.0654m/s;
241    8.545  0.0608  256.3  69.06  35.99  0.15  114.6  19.96  8.692  65.98; matched energy radial
vel = 0.0938m/s;
243    7.639  0.0614  262.8  68.79  36.0  0.149  119.2  20.08  9.02  67.97; acute zone;
255    1.967  0.0653  305.2  66.76  36.05  0.14  151.2  20.79  11.23  80.98; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 7.75 m
  conc dilutn width distnce
(kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
7.00E-5 14288.8 1012.4 100.0 2577.7 0.0 0.0 1.00E-5 3.00E-4
4.85E-5 20595.5 1459.3 200.0 5355.5 0.0 0.0 1.00E-5 3.00E-4
count: 2

```

/ UM3.

Case 14; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.001.db; Diffuser table record 2: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	28.0	1.0

Simulation:

Froude number: 14.73; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	43.74	0.0311	41.04	27.09	33.32	0.36	7.135	6.267	0.176	3.284;
200	25.67	0.0495	169.7	66.49	35.84	0.154	51.43	18.67	4.451	39.58;
224	17.22	0.0548	228.3	66.87	36.0	0.136	82.71	20.87	7.266	58.97; acute zone;
225	16.84	0.0551	231.2	66.8	36.0	0.136	84.36	20.95	7.407	59.9; matched energy radial
vel = 0.0388m/s;										
241	10.41	0.0595	281.9	65.03	36.07	0.125	115.8	22.19	9.997	76.43; matched energy radial
vel = 0.0708m/s;										
242	9.982	0.0598	285.3	64.88	36.07	0.125	118.1	22.26	10.18	77.57; matched energy radial
vel = 0.0743m/s;										
243	9.556	0.0601	288.9	64.72	36.08	0.124	120.5	22.33	10.37	78.72; matched energy radial
vel = 0.0782m/s;										
258	2.898	0.0647	347.9	61.69	36.13	0.115	162.2	23.34	13.58	97.79; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of									8.84 m	
conc		dilutn	width	distnce	time					
(kg/kg)			(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
6.85E-5		14589.5	1098.7	100.0	2549.1	0.0	0.0	1.00E-5	3.00E-4	
4.74E-5		21089.8	1588.2	200.0	5326.9	0.0	0.0	1.00E-5	3.00E-4	
count: 2										

/ UM3.

Case 15; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41

14.94 0.0 90.0 36.25 21.18 0.0 0.0 0.00001 90.0 0.0003 25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 24.14; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.03	0.0295	42.33	19.87	35.39	0.341	7.203	6.486	0.183	3.432;
191	32.4	0.0472	191.5	49.64	36.11	0.102	43.63	21.47	4.793	44.88; acute zone;
200	30.22	0.0479	215.7	51.18	36.13	0.0963	52.15	22.84	5.952	53.58;
271	8.445	0.0609	512.6	41.21	36.22	0.0698	212.7	30.8	23.38	167.4; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.02 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
6.06E-5	16490.2	1394.8	100.0	2450.4	0.0	0.0	1.00E-5	3.00E-4
4.15E-5	24086.3	2037.4	200.0	5228.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 16; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.001.db; Diffuser table record 4: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41

14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	28.0	1.0

Simulation:

Froude number: -15.79; effleunt density (sigma-T) 41.53; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	41.59	0.0439	46.78	33.43	39.53	0.283	7.343	5.047	0.252	3.702;
135	40.31	0.0445	76.45	13.87	38.41	0.163	11.13	7.805	0.712	8.233; begin overlap;
160	40.14	0.0445	88.22	-0.312	38.15	0.14	12.67	9.143	1.028	11.07; local maximum rise or fall;
200	40.59	0.0444	97.79	-22.96	37.89	0.133	14.71	11.13	1.584	15.87;
230	41.73	0.0438	105.1	-39.64	37.63	0.137	17.46	12.84	2.167	20.73; end overlap;
275	48.12	0.0071	125.5	-64.17	37.09	0.158	28.62	16.88	4.108	36.99; bottom hit;
300	57.43	-0.0485	158.1	-75.35	36.78	0.157	45.68	19.83	5.598	55.49;
326	64.57	-0.0921	223.6	-76.06	36.57	0.128	74.75	21.35	5.393	71.15; acute zone;
328	64.94	-0.0943	228.8	-75.38	36.56	0.127	77.13	21.42	5.328	72.05; begin overlap;
400	77.19	-0.168	392.0	-36.88	36.36	0.12	211.7	23.19	-2.925	112.3;
415	79.79	-0.183	428.6	-28.51	36.34	0.129	272.5	23.47	-7.042	124.3; end overlap;
465	90.79	-0.249	590.0	-10.77	36.28	0.183	731.4	24.39	-44.66	199.9; stream limit reached;
500	99.84	-0.303	744.5	-5.06	36.27	0.23	1462.7	24.95	-116.0	304.9;
501	100.1	-0.304	749.6	-4.93	36.27	0.231	1492.0	24.97	-119.1	309.0; trap level;
545	108.2	-0.355	1028.0	0.0839	36.26	0.293	3565.9	25.67	-382.1	608.1; local maximum rise or fall;
564	104.0	-0.332	1204.5	1.163	36.25	0.31	5194.9	26.03	-662.8	889.5; chronic zone;
566	103.1	-0.326	1226.8	1.109	36.25	0.311	5404.8	26.07	-709.6	935.3; trap level;

Outside chronic zone

/ UM3.

Case 17; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.001.db; Diffuser table record 5: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38

3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 24.66; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	43.93	0.03	42.01	20.01	31.94	0.682	7.09	6.786	0.098	1.82;
176	32.64	0.047	150.2	51.7	35.28	0.24	31.53	22.12	2.014	19.79; acute zone;
200	23.72	0.0502	204.2	61.86	35.65	0.209	50.7	27.45	3.944	34.35;
226	10.81	0.0591	281.1	67.32	35.89	0.185	84.82	32.41	7.188	56.46; matched energy radial
227	10.27	0.0595	284.6	67.4	35.9	0.184	86.52	32.57	7.339	57.44; matched energy radial
229	9.179	0.0603	291.8	67.56	35.91	0.182	90.01	32.9	7.648	59.41; matched energy radial
242	1.832	0.0653	343.8	67.68	35.99	0.169	116.4	34.89	9.902	73.23; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 8.73 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
9.66E-5	10353.6	1073.2	100.0	2470.7	0.0	0.0	1.00E-5	3.00E-4
6.63E-5	15090.0	1564.2	200.0	5248.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 18; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.001.db; Diffuser table record 6: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	28.0	1.0

Simulation:

Froude number: 29.45; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	43.99	0.0297	42.32	18.59	33.32	0.676	7.135	6.85	0.099	1.84;
171	34.99	0.0462	149.6	43.33	35.53	0.222	29.01	22.1	1.869	18.92; acute zone;
200	25.18	0.0496	222.1	56.79	35.84	0.179	51.38	29.6	4.448	38.68;
226	12.77	0.0578	308.6	62.97	36.01	0.155	85.97	35.43	8.239	64.83; matched energy radial
vel = 0.0782m/s;										
227	12.25	0.0581	312.5	63.08	36.01	0.154	87.69	35.62	8.414	65.98; matched energy radial
vel = 0.0821m/s;										
230	10.69	0.0592	324.5	63.34	36.03	0.152	93.06	36.2	8.955	69.46; matched energy radial
vel = 0.0961m/s;										
244	3.159	0.0644	388.0	63.3	36.08	0.14	122.8	38.64	11.81	87.09; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.85 m										
conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)		

9.60E-5 10412.6 1155.0 100.0 2435.7 0.0 0.0 1.00E-5 3.00E-4
 6.56E-5 15233.6 1689.7 200.0 5213.5 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 19; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.001.db; Diffuser table record 7: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 48.29; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.018	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.07	0.0292	42.77	16.36	35.39	0.668	7.203	6.946	0.1	1.869;
166	38.19	0.0452	151.1	26.79	36.02	0.198	26.6	22.24	1.722	18.19; acute zone;
200	30.15	0.0479	266.3	39.3	36.13	0.126	52.15	33.81	5.471	47.69;
229	19.39	0.0533	403.8	46.51	36.18	0.0975	92.6	43.15	11.61	91.16; matched energy radial

vel = 0.0423m/s;

230 18.98 0.0535 409.4 46.59 36.18 0.0967 94.45 43.43 11.87 92.91; matched energy radial
 vel = 0.0434m/s;
 238 15.75 0.0558 456.7 46.75 36.19 0.0911 110.7 45.55 14.05 107.4; matched energy radial
 vel = 0.055m/s;
 256 8.281 0.061 575.5 45.11 36.21 0.0821 158.1 49.72 19.89 144.2; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.62 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 8.71E-5 11481.4 1467.6 100.0 2324.4 0.0 0.0 1.00E-5 3.00E-4
 5.88E-5 17010.0 2174.3 200.0 5102.2 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 20; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.001.db; Diffuser table record 8: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -31.58; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time

Step	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)	
0	46.0	0.018	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;	
100	41.02	0.0442	44.21	42.39	39.53	0.636	7.343	5.151	0.131	1.891;	
170	34.08	0.0466	153.3	14.09	37.32	0.164	22.44	16.03	1.862	16.22;	begin overlap;
195	33.74	0.0468	177.3	-0.0619	37.19	0.141	25.64	18.69	2.614	21.9;	local maximum rise or fall;
200	33.75	0.0468	180.6	-2.9	37.17	0.138	26.15	19.18	2.765	23.03;	
226	34.26	0.0466	193.4	-17.62	37.09	0.133	28.78	21.71	3.598	29.19;	acute zone;
265	36.91	0.0457	212.1	-39.33	36.93	0.137	35.55	26.05	5.275	41.39;	end overlap;
300	44.86	0.0272	249.8	-57.91	36.71	0.147	52.71	31.81	8.39	63.64;	
305	47.14	0.0141	255.7	-60.65	36.68	0.15	56.46	32.93	9.128	69.05;	bottom hit;
343	66.42	-0.103	371.9	-75.65	36.48	0.132	106.3	39.38	12.46	111.1;	begin overlap;
400	79.33	-0.181	546.5	-50.83	36.37	0.117	202.3	42.19	7.894	147.2;	
446	89.69	-0.242	646.8	-25.34	36.32	0.15	359.0	43.93	-5.97	188.0;	stream limit reached;
449	90.37	-0.246	655.2	-23.7	36.31	0.154	377.9	44.03	-7.473	191.3;	end overlap;
500	105.1	-0.334	865.0	-6.868	36.27	0.24	1031.4	45.92	-78.6	300.5;	
506	106.9	-0.345	897.9	-5.855	36.27	0.251	1161.5	46.14	-95.37	321.4;	trap level;
552	117.1	-0.408	1230.1	0.0279	36.26	0.332	2888.3	47.84	-381.9	612.9;	local maximum rise or fall;
570	113.0	-0.386	1424.2	1.229	36.26	0.352	4125.2	48.63	-658.0	857.0;	chronic zone;
574	111.0	-0.374	1476.5	1.181	36.26	0.355	4465.2	48.84	-754.4	939.9;	trap level;

Outside chronic zone

/ UM3.

Case 21; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.001.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41

14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

Froude number: 37.0; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.01	0.0296	42.33	17.34	31.94	1.007	7.09	6.985	0.0679	1.259;
163	37.03	0.0455	137.1	33.85	35.01	0.335	24.62	22.07	1.096	11.6; acute zone;
200	24.49	0.0498	237.3	53.0	35.65	0.233	50.84	34.59	3.737	32.16;
223	11.65	0.0585	318.8	61.7	35.87	0.204	80.15	41.96	6.827	53.55; matched energy radial
vel = 0.116m/s;										
224	11.02	0.0589	322.8	61.98	35.88	0.203	81.75	42.25	6.992	54.63; matched energy radial
vel = 0.124m/s;										
225	10.38	0.0594	326.8	62.24	35.89	0.201	83.39	42.54	7.159	55.73; matched energy radial
vel = 0.132m/s;										
237	2.433	0.0648	380.2	64.47	35.96	0.189	105.8	45.81	9.369	69.63; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 9.66 m										
	conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
	1.12E-4	8929.0	1126.8	100.0	2381.9	0.0	0.0	1.00E-5	3.00E-4	
	7.61E-5	13141.4	1658.4	200.0	5159.6	0.0	0.0	1.00E-5	3.00E-4	
count: 2										

/ UM3.

Case 22; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.001.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39

7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 44.18; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.018	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.03	0.0295	42.54	16.67	33.32	1.003	7.135	7.033	0.0684	1.268;
162	37.86	0.0453	138.5	28.85	35.39	0.324	24.32	22.25	1.086	11.61; acute zone;
200	26.14	0.0493	254.6	47.14	35.84	0.204	51.54	36.61	4.098	35.2;
224	13.31	0.0573	352.0	56.83	36.0	0.173	82.89	45.58	7.896	61.7; matched energy radial
225	12.7	0.0578	356.6	57.13	36.0	0.171	84.55	45.92	8.091	62.99; matched energy radial
226	12.09	0.0582	361.2	57.41	36.01	0.17	86.24	46.26	8.289	64.29; matched energy radial
239	3.844	0.0639	427.4	59.94	36.07	0.157	111.6	50.33	11.12	82.26; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 10.86 m

conc (kg/kg)	dilutn (m)	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.11E-4	8981.2	1207.9	100.0	2341.3	0.0	0.0	1.00E-5	3.00E-4
7.53E-5	13279.8	1786.0	200.0	5119.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 23; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.001.db; Diffuser table record 11: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
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0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 72.43; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)																																												
0	46.0	0.018	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;																																												
100	44.06	0.0293	42.85	15.62	35.39	0.998	7.203	7.104	0.0691	1.282;																																												
160	39.25	0.0448	138.4	20.23	35.99	0.314	23.62	22.25	1.039	11.35; acute zone;																																												
200	30.67	0.0477	287.3	30.82	36.13	0.162	52.15	39.91	4.678	40.23;																																												
231	17.95	0.0542	470.2	40.71	36.19	0.112	96.34	55.54	11.75	90.18; matched energy radial																																												
vel = 0.0611m/s;																																																						
232	17.47	0.0545	477.3	40.92	36.19	0.111	98.27	56.01	12.05	92.19; matched energy radial																																												
vel = 0.063m/s;																																																						
235	16.03	0.0555	498.9	41.45	36.19	0.108	104.3	57.37	12.98	98.34; matched energy radial																																												
vel = 0.0698m/s;																																																						
250	8.654	0.0607	616.7	42.98	36.21	0.095	140.3	63.54	18.16	131.5; surface;																																												
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.66 m																																																						
<table border="0"> <tr> <td>conc</td> <td>dilutn</td> <td>width</td> <td>distnce</td> <td>time</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(kg/kg)</td> <td></td> <td>(m)</td> <td>(m)</td> <td>(hrs)</td> <td>(kg/kg)</td> <td>(s-1)</td> <td>(m/s)</td> <td>(m0.67/s2)</td> <td></td> <td></td> </tr> <tr> <td>1.02E-4</td> <td>9733.4</td> <td>1501.2</td> <td>100.0</td> <td>2218.3</td> <td>0.0</td> <td>0.0</td> <td>1.00E-5</td> <td>3.00E-4</td> <td></td> <td></td> </tr> <tr> <td>6.85E-5</td> <td>14606.8</td> <td>2252.8</td> <td>200.0</td> <td>4996.1</td> <td>0.0</td> <td>0.0</td> <td>1.00E-5</td> <td>3.00E-4</td> <td></td> <td></td> </tr> </table>											conc	dilutn	width	distnce	time							(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)			1.02E-4	9733.4	1501.2	100.0	2218.3	0.0	0.0	1.00E-5	3.00E-4			6.85E-5	14606.8	2252.8	200.0	4996.1	0.0	0.0	1.00E-5	3.00E-4		
conc	dilutn	width	distnce	time																																																		
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)																																														
1.02E-4	9733.4	1501.2	100.0	2218.3	0.0	0.0	1.00E-5	3.00E-4																																														
6.85E-5	14606.8	2252.8	200.0	4996.1	0.0	0.0	1.00E-5	3.00E-4																																														
count: 2																																																						

/ UM3.

Case 24; ambient file C:\Plumes\Proj\00\OO_WINT_49ft_UNIa.001.db; Diffuser table record 12: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.067	90.0	36.26	21.36	0.0	0.0	0.067	90.0	0.0003	25.38
0.914	0.0649	90.0	36.26	21.35	0.0	0.0	0.0649	90.0	0.0003	25.38
2.134	0.0621	90.0	36.26	21.34	0.0	0.0	0.0621	90.0	0.0003	25.38
3.048	0.0601	90.0	36.26	21.32	0.0	0.0	0.0601	90.0	0.0003	25.39
3.962	0.058	90.0	36.26	21.31	0.0	0.0	0.058	90.0	0.0003	25.39
4.877	0.0559	90.0	36.25	21.3	0.0	0.0	0.0559	90.0	0.0003	25.38
6.096	0.0531	90.0	36.25	21.29	0.0	0.0	0.0531	90.0	0.0003	25.39
7.468	0.05	90.0	36.25	21.27	0.0	0.0	0.05	90.0	0.0003	25.39
7.925	0.0495	90.0	36.25	21.26	0.0	0.0	0.0495	90.0	0.0003	25.4
9.144	0.0481	90.0	36.25	21.25	0.0	0.0	0.0481	90.0	0.0003	25.4
10.06	0.047	90.0	36.25	21.24	0.0	0.0	0.047	90.0	0.0003	25.4
10.97	0.046	90.0	36.25	21.22	0.0	0.0	0.046	90.0	0.0003	25.41
11.89	0.0449	90.0	36.25	21.21	0.0	0.0	0.0449	90.0	0.0003	25.41
12.7	0.044	90.0	36.25	21.2	0.0	0.0	0.044	90.0	0.0003	25.41
14.02	0.018	90.0	36.25	21.19	0.0	0.0	0.018	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -47.37; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.018	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	40.84	0.0442	43.73	43.84	39.53	0.976	7.343	5.239	0.09	1.287;
178	28.63	0.0485	203.0	21.13	37.05	0.188	30.32	21.87	2.446	19.67; acute zone;
190	27.89	0.0488	229.2	14.41	36.97	0.165	33.67	24.12	3.041	23.93; begin overlap;
200	27.54	0.0489	246.8	8.781	36.92	0.152	35.94	25.78	3.524	27.35;
216	27.36	0.049	267.1	-0.282	36.87	0.14	38.76	28.22	4.294	32.74; local maximum rise or fall;
285	32.03	0.0474	319.1	-38.95	36.7	0.137	53.64	39.03	8.487	61.54; end overlap;
300	35.38	0.0463	338.6	-46.99	36.64	0.14	61.67	42.18	10.08	72.28;
322	45.39	0.0257	386.5	-58.36	36.54	0.146	83.5	48.4	14.01	98.82; bottom hit;
352	66.08	-0.1	508.0	-72.58	36.43	0.133	133.6	56.26	19.11	146.0; begin overlap;

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400    80.57  -0.188   680.9  -63.34   36.37   0.116   207.9   60.15   16.79   184.3;
419    85.27  -0.216   725.0  -53.73   36.35   0.119   240.8   61.23   14.1    198.7; stream limit reached;
480    100.4   -0.306   826.0  -20.73   36.3    0.174   451.6   64.3    -7.508  256.9; end overlap;
500    106.7   -0.343   892.5  -11.65   36.29   0.219   664.5   65.44   -30.93  294.2;
514    111.2   -0.371   956.4  -7.787   36.28   0.251   876.8   66.24   -58.69  330.4; trap level;
567    124.0   -0.449  1342.4  0.0276   36.26   0.362  2504.5   69.38   -366.4  623.4; local maximum rise or
fall;
586    119.4   -0.424  1565.4  1.259    36.26   0.387  3648.6   70.71   -668.2  866.7; chronic zone;
590    117.2   -0.412  1622.8  1.213    36.26   0.39   3949.3   71.06   -768.7  945.5; trap level;
Outside chronic zone

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/ UM3.

Case 25; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.002.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	28.0	1.0

Simulation:

```

Froude number:      12.33; effleunt density (sigma-T)      0.034; effleunt velocity      2.402(m/s);
  Depth  Amb-cur  P-dia  V-angle  Eff-sal  P-speed  Dilutn  x-posn  y-posn  Time
Step    (ft)    (m/s)  (in)   (deg)   (psu)   (m/s)   ( )    (ft)   (ft)   (s)

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0      46.0  0.0359   6.0    15.0    5.0    2.402   1.0    0.0    0.0    0.0;
100    43.87 0.0607  40.34  29.47  31.94  0.371   7.09   5.58   0.3    2.849;
200    32.29 0.0944  165.3  54.57  35.65  0.161  51.21  13.8   5.499  25.72;
252    20.59 0.105   301.2  46.05  36.04  0.136  143.4  16.48  14.74  57.49; acute zone;
253    20.32 0.105   304.6  45.81  36.04  0.136  146.2  16.52  15.0   58.33; matched energy radial
vel = 0.0425m/s;
274    14.35 0.114   383.0  40.29  36.11  0.13   221.6  17.34  21.37  78.48; matched energy radial
vel = 0.0725m/s;
275    14.05 0.114   387.1  40.02  36.12  0.13   226.1  17.38  21.72  79.57; matched energy radial
vel = 0.0748m/s;
278    13.14 0.115   399.5  39.22  36.12  0.13   239.9  17.48  22.82  82.93; matched energy radial
vel = 0.0822m/s;
292    8.685 0.121   461.2  35.42  36.16  0.129  316.5  17.95  28.69  100.4; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 11.72 m
  conc dilutn width distnce time
(kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
3.90E-5 25627.0 1310.9 100.0 2491.3  0.0    0.0 1.00E-5 3.00E-4
2.68E-5 37268.6 1906.4 200.0 5269.1  0.0    0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 26; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.002.db; Diffuser table record 2: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	28.0	1.0

Simulation:

Froude number: 14.73; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	44.01	0.0592	41.15	25.74	33.32	0.358	7.135	5.697	0.307	2.926;
200	33.8	0.0934	178.6	48.19	35.84	0.139	51.53	14.69	5.931	28.05;
243	25.64	0.099	291.3	41.49	36.08	0.123	120.7	17.23	13.7	55.44; acute zone;
278	16.69	0.11	422.0	33.4	36.16	0.117	241.4	18.86	25.36	93.31; matched energy radial
vel = 0.0617m/s;										
279	16.4	0.111	426.3	33.15	36.17	0.117	246.2	18.9	25.79	94.66; matched energy radial
vel = 0.0634m/s;										
285	14.66	0.113	452.9	31.61	36.17	0.117	277.3	19.14	28.54	103.2; matched energy radial
vel = 0.0752m/s;										
297	10.94	0.118	508.9	28.86	36.19	0.117	351.7	19.6	34.96	122.5; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.93 m										
conc dilutn width distance time										
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)										
3.67E-5 27259.0 1384.8 100.0 2438.4 0.0 0.0 1.00E-5 3.00E-4										
2.51E-5 39867.7 2025.4 200.0 5216.2 0.0 0.0 1.00E-5 3.00E-4										
count: 2										

/ UM3.

Case 27; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.002.db; Diffuser table record 3: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-sp m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4

10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 24.14; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.24	0.0565	42.29	19.23	35.39	0.342	7.203	5.873	0.318	3.042;
200	37.78	0.0906	201.0	29.86	36.12	0.105	49.29	16.22	6.342	31.37;
230	34.49	0.0929	280.1	26.18	36.18	0.0983	89.28	18.6	12.07	52.71; acute zone;
300	20.35	0.105	558.5	15.88	36.23	0.0991	357.1	23.64	50.1	180.5;
309	17.8	0.109	607.4	14.02	36.24	0.1	426.7	24.22	59.72	211.0; matched energy radial
vel = 0.0712m/s;										
314	16.33	0.111	635.9	12.97	36.24	0.101	471.1	24.54	65.9	230.2; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.15 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.12E-5	32078.2	1519.8	100.0	2182.4	0.0	0.0	1.00E-5	3.00E-4
2.07E-5	48359.0	2291.1	200.0	4960.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 28; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.002.db; Diffuser table record 4: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38

6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChronicMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	28.0	1.0

Simulation:

Froude number: -15.79; effleunt density (sigma-T) 41.53; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	42.09	0.0821	45.96	35.08	39.53	0.294	7.343	4.372	0.403	3.091;
131	40.92	0.0885	76.16	20.47	38.31	0.172	11.69	6.412	1.082	6.515; begin overlap;
170	40.53	0.0888	100.0	-0.166	37.82	0.133	15.39	8.28	2.106	11.04; local maximum rise or fall;
200	40.8	0.0886	110.4	-16.55	37.6	0.127	17.86	9.661	3.072	15.1;
235	42.07	0.0837	128.2	-34.04	37.25	0.127	24.15	11.54	4.764	21.93; end overlap;
273	47.3	0.0231	164.9	-52.88	36.83	0.134	41.91	14.54	9.087	39.55; bottom hit;
300	54.88	-0.0678	195.5	-68.18	36.65	0.134	59.69	16.74	12.74	58.63;
308	56.35	-0.086	213.7	-72.26	36.61	0.125	66.76	17.07	13.15	62.29; begin overlap;
320	58.16	-0.108	237.4	-77.23	36.57	0.117	76.42	17.44	13.45	67.03; acute zone;
400	67.88	-0.225	327.5	-49.69	36.42	0.117	144.9	19.02	10.45	96.18;
448	73.54	-0.292	360.0	-22.91	36.35	0.167	247.0	19.69	2.192	118.4; end overlap;
500	81.81	-0.391	462.1	-6.794	36.29	0.28	685.2	20.44	-39.75	174.8;
538	88.45	-0.47	592.0	-3.116	36.27	0.361	1454.1	20.89	-125.2	255.1; stream limit reached;
555	91.39	-0.506	667.6	-2.098	36.26	0.397	2036.1	21.06	-191.9	308.6; trap level;
600	96.82	-0.572	941.1	-0.235	36.25	0.486	4963.7	21.46	-524.8	534.6;
609	96.99	-0.575	1013.8	0.0207	36.25	0.501	5932.1	21.53	-637.0	603.7; local maximum rise or fall;
611	96.96	-0.574	1031.0	0.0723	36.25	0.503	6171.8	21.54	-665.9	621.3; chronic zone;
632	93.97	-0.542	1242.9	0.382	36.25	0.524	9354.4	21.77	-1203.5	937.7; trap level;

Outside chronic zone

/ UM3.

Case 29; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.002.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 24.66; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0359	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	44.06	0.0586	42.02	19.66	31.94	0.681	7.09	6.414	0.181	1.699;
192	32.46	0.0943	193.4	49.38	35.55	0.201	43.71	21.53	4.891	22.87; acute zone;
200	30.54	0.0956	214.7	50.83	35.65	0.191	51.21	22.74	5.927	26.77;
272	8.014	0.122	506.8	42.75	36.11	0.143	213.0	30.74	23.55	84.4; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 12.87 m

conc	dilutn	width	distnce	time
(kg/kg)	(m)	(m)	(hrs)	(kg/kg)
6.03E-5	16574.4	1384.2	100.0	2449.9
4.13E-5	24210.8	2021.9	200.0	5227.7

count: 2

/ UM3.

Case 30; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.002.db; Diffuser table record 6: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	28.0	1.0

Simulation:

Froude number: 29.45; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0359	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	44.11	0.058	42.32	18.33	33.32	0.676	7.135	6.472	0.183	1.717;
187	34.86	0.0926	192.1	41.74	35.73	0.185	39.88	21.59	4.549	21.89; acute zone;
200	32.2	0.0945	229.8	44.29	35.85	0.168	51.58	23.8	6.316	28.65;
277	10.56	0.119	568.8	35.43	36.16	0.127	236.9	33.23	28.18	100.8; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.45 m

conc	dilutn	width	distnce	time					
(kg/kg)	(m)	(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
5.68E-5	17590.7	1482.3	100.0	2408.9	0.0	0.0	1.00E-5	3.00E-4	
3.87E-5	25811.2	2175.0	200.0	5186.7	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 31; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.002.db; Diffuser table record 7: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 48.29; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.18	0.0572	42.75	16.24	35.39	0.668	7.203	6.559	0.185	1.743;
181	38.26	0.0903	192.6	25.46	36.08	0.165	35.8	21.69	4.119	20.76; acute zone;
200	35.9	0.0919	257.1	27.42	36.13	0.134	51.83	25.49	6.897	31.71;
231	31.34	0.0951	386.1	26.52	36.18	0.11	95.4	30.86	13.83	57.09; matched energy radial
vel = 0.0283m/s;										
232	31.18	0.0952	390.8	26.42	36.19	0.11	97.31	31.02	14.12	58.12; matched energy radial
vel = 0.0287m/s;										
275	22.08	0.103	621.8	20.54	36.22	0.102	228.0	37.64	34.11	125.6; matched energy radial
vel = 0.0598m/s;										

```

276      21.82    0.103    628.0    20.36    36.22    0.102    232.6    37.79    34.81    127.9; matched energy radial
vel = 0.0611m/s;
282      20.18    0.106    666.3    19.24    36.23    0.102    261.9    38.67    39.29    142.4; matched energy radial
vel = 0.0702m/s;
291      17.55    0.109    726.7    17.45    36.23    0.103    313.0    39.98    47.17    167.4; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of      18.46 m
  conc dilutn  width distnce  time
(kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
4.83E-5 20717.2 1688.3  100.0 2254.3  0.0    0.0 1.00E-5 3.00E-4
3.23E-5 30951.8 2522.4  200.0 5032.0  0.0    0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 32; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.002.db; Diffuser table record 8: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -31.58; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);
Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time

Step	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)	
0	46.0	0.0359	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;	
100	41.38	0.0881	44.07	42.5	39.53	0.64	7.343	4.756	0.231	1.71;	
167	35.49	0.0923	152.8	20.24	37.26	0.175	23.95	13.0	2.861	12.69;	begin overlap;
200	34.72	0.0928	196.9	3.049	37.02	0.138	31.15	16.15	4.931	20.43;	
206	34.7	0.0929	202.6	-0.195	37.0	0.135	32.26	16.7	5.35	21.97;	local maximum rise or
fall;											
244	35.66	0.0922	233.1	-20.63	36.85	0.129	40.44	20.3	8.523	33.46;	acute zone;
263	37.17	0.0912	258.0	-29.79	36.74	0.128	49.28	22.39	10.84	41.72;	end overlap;
295	43.86	0.0659	347.0	-41.19	36.52	0.126	87.91	26.92	18.51	68.55;	bottom hit;
300	45.94	0.0417	362.4	-43.88	36.5	0.127	96.07	27.82	20.58	75.96;	
325	56.21	-0.0829	418.7	-58.36	36.44	0.123	125.4	31.1	28.27	107.3;	begin overlap;
400	70.22	-0.252	587.4	-72.01	36.37	0.0996	198.6	34.15	30.57	150.3;	
497	84.68	-0.425	580.4	-19.79	36.31	0.194	372.6	36.47	14.06	203.4;	end overlap;
500	85.24	-0.432	580.0	-18.19	36.31	0.203	389.4	36.54	12.41	206.0;	
532	92.45	-0.518	622.2	-6.744	36.28	0.328	725.6	37.49	-26.74	250.7;	stream limit reached;
564	98.77	-0.594	739.4	-2.862	36.27	0.436	1367.5	38.24	-112.4	318.0;	trap level;
600	104.7	-0.665	950.0	-0.865	36.26	0.537	2789.5	38.98	-324.5	448.9;	
627	106.5	-0.688	1176.6	0.00868	36.26	0.597	4761.3	39.47	-629.5	611.4;	local maximum rise or
fall;											
629	106.5	-0.688	1196.5	0.0591	36.25	0.6	4953.7	39.51	-661.4	627.6;	chronic zone;
652	102.7	-0.647	1467.6	0.377	36.25	0.628	7811.5	40.09	-1337.8	960.3;	trap level;

Outside chronic zone

/ UM3.

Case 33; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.002.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41

12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

Froude number: 37.0; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.09	0.0582	42.33	17.22	31.94	1.007	7.09	6.711	0.128	1.199;
173	36.87	0.0912	163.2	34.49	35.23	0.289	30.01	21.96	2.531	12.92; acute zone;
200	30.25	0.0958	245.0	44.78	35.65	0.219	51.21	29.06	5.799	25.65;
262	8.109	0.122	538.6	45.86	36.08	0.156	174.8	40.9	21.13	76.55; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.68 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
7.60E-5	13154.5	1423.2	100.0	2388.0	0.0	0.0	1.00E-5	3.00E-4
5.17E-5	19347.1	2093.2	200.0	5165.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 34; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.002.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41

11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 44.18; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.11	0.058	42.54	16.58	33.32	1.003	7.135	6.756	0.129	1.207;
171	37.9	0.0905	162.4	28.97	35.53	0.282	29.06	21.89	2.425	12.58; acute zone;
200	31.82	0.0947	258.3	38.46	35.85	0.199	51.58	30.05	6.09	26.99;
267	10.55	0.119	609.4	38.45	36.14	0.135	194.4	44.01	25.05	90.34; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.48 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
7.18E-5	13926.7	1532.6	100.0	2349.1	0.0	0.0	1.00E-5	3.00E-4
4.86E-5	20573.8	2264.1	200.0	5126.8	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 35; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.002.db; Diffuser table record 11: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4

10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 72.43; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.14	0.0577	42.84	15.58	35.39	0.998	7.203	6.824	0.131	1.22;
169	39.29	0.0896	162.8	20.07	36.03	0.271	28.23	21.98	2.333	12.37; acute zone;
200	34.99	0.0925	280.3	24.35	36.13	0.17	52.15	31.56	6.515	29.05;
246	26.25	0.0986	538.7	24.98	36.2	0.115	129.3	44.08	19.54	75.42; matched energy radial
vel = 0.0492m/s;										
247	26.03	0.0988	545.3	24.88	36.2	0.114	131.8	44.32	19.95	76.8; matched energy radial
vel = 0.05m/s;										
265	21.78	0.103	671.3	22.45	36.22	0.108	188.3	48.48	28.72	106.0; matched energy radial
vel = 0.0695m/s;										
266	21.52	0.104	678.7	22.28	36.22	0.108	192.1	48.7	29.29	107.9; matched energy radial
vel = 0.0709m/s;										
267	21.27	0.104	686.1	22.11	36.22	0.108	195.9	48.92	29.88	109.9; matched energy radial
vel = 0.0724m/s;										
279	18.02	0.109	778.2	19.86	36.23	0.106	248.5	51.56	37.97	135.8; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 19.77 m										
conc dilutn width distnce time										
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)										
6.25E-5 16007.9 1759.9 100.0 2235.6 0.0 0.0 1.00E-5 3.00E-4										
4.17E-5 23971.0 2635.4 200.0 5013.4 0.0 0.0 1.00E-5 3.00E-4										
count: 2										

/ UM3.

Case 36; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.002.db; Diffuser table record 12: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
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0.0	0.134	90.0	36.26	21.36	0.0	0.0	0.134	90.0	0.0003	25.38
0.914	0.13	90.0	36.26	21.35	0.0	0.0	0.13	90.0	0.0003	25.38
2.134	0.124	90.0	36.26	21.34	0.0	0.0	0.124	90.0	0.0003	25.38
3.048	0.12	90.0	36.26	21.32	0.0	0.0	0.12	90.0	0.0003	25.39
3.962	0.116	90.0	36.26	21.31	0.0	0.0	0.116	90.0	0.0003	25.39
4.877	0.112	90.0	36.25	21.3	0.0	0.0	0.112	90.0	0.0003	25.38
6.096	0.106	90.0	36.25	21.29	0.0	0.0	0.106	90.0	0.0003	25.39
7.468	0.1	90.0	36.25	21.27	0.0	0.0	0.1	90.0	0.0003	25.39
7.925	0.099	90.0	36.25	21.26	0.0	0.0	0.099	90.0	0.0003	25.4
9.144	0.0962	90.0	36.25	21.25	0.0	0.0	0.0962	90.0	0.0003	25.4
10.06	0.0941	90.0	36.25	21.24	0.0	0.0	0.0941	90.0	0.0003	25.4
10.97	0.092	90.0	36.25	21.22	0.0	0.0	0.092	90.0	0.0003	25.41
11.89	0.0899	90.0	36.25	21.21	0.0	0.0	0.0899	90.0	0.0003	25.41
12.7	0.088	90.0	36.25	21.2	0.0	0.0	0.088	90.0	0.0003	25.41
14.02	0.0359	90.0	36.25	21.19	0.0	0.0	0.0359	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -47.37; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0359	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	41.12	0.0883	43.67	43.85	39.53	0.978	7.343	4.951	0.165	1.198;
187	30.14	0.096	226.8	20.49	36.92	0.179	35.88	19.43	4.627	18.49; begin overlap;
200	29.45	0.0965	257.6	14.02	36.84	0.158	40.82	21.31	5.835	22.76; acute zone;
227	28.9	0.0969	305.2	-0.25	36.74	0.137	49.39	25.04	8.705	32.73; local maximum rise or fall;
281	32.32	0.0946	389.7	-28.03	36.57	0.129	75.62	33.09	17.13	61.3; end overlap;
300	36.91	0.0915	462.0	-35.37	36.48	0.128	105.1	36.93	23.25	81.68;
310	40.57	0.089	511.9	-37.9	36.44	0.127	128.1	39.05	27.65	96.33; bottom hit;
339	56.81	-0.0889	643.9	-51.97	36.38	0.119	191.7	45.07	43.5	153.5; begin overlap;
400	71.51	-0.267	875.1	-77.58	36.34	0.0903	266.6	48.74	48.92	202.9;
500	87.64	-0.461	855.0	-31.95	36.31	0.138	384.1	51.96	38.73	262.7;
526	92.15	-0.514	795.7	-17.55	36.3	0.2	479.2	52.78	28.46	283.3; stream limit reached;
529	92.72	-0.521	789.2	-15.93	36.3	0.212	499.1	52.88	26.55	286.2; end overlap;
553	99.12	-0.597	785.1	-6.457	36.28	0.336	786.3	54.01	-11.73	328.3; trap level;
600	108.2	-0.707	987.4	-1.233	36.26	0.534	1994.4	55.7	-201.1	455.6;
633	110.7	-0.739	1261.3	0.00659	36.26	0.627	3833.6	56.68	-520.9	620.8; local maximum rise or fall;

642 110.3 -0.735 1359.0 0.224 36.26 0.645 4581.5 56.97 -669.4 691.8; chronic zone;
 660 106.4 -0.692 1595.2 0.423 36.25 0.668 6543.5 57.76 -1243.0 956.4; trap level;
 Outside chronic zone

/ UM3.

Case 37; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.003.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	28.0	1.0

Simulation:

Froude number: 12.33; effleunt density (sigma-T) 0.034; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0539	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	44.1	0.0873	40.43	28.04	31.94	0.369	7.09	5.145	0.401	2.586;
200	36.79	0.137	162.7	39.04	35.65	0.165	50.59	11.46	5.897	19.46;
255	28.94	0.145	289.0	29.81	36.05	0.156	150.3	13.69	17.43	46.76; acute zone;
300	18.61	0.162	449.5	22.27	36.17	0.157	366.4	15.14	38.9	93.56;
312	15.18	0.169	502.9	20.12	36.18	0.159	464.6	15.46	47.79	111.9; matched energy radial

vel = 0.11m/s;

319 13.03 0.173 536.1 18.99 36.19 0.161 533.7 15.65 53.88 124.3; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 13.62 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 2.53E-5 39514.0 1393.1 100.0 2302.7 0.0 0.0 1.00E-5 3.00E-4
 1.70E-5 58691.0 2069.3 200.0 5080.5 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 38; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.003.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	28.0	1.0

Simulation:

Froude number: 14.73; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0539	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	44.21	0.0853	41.15	24.57	33.32	0.358	7.135	5.242	0.41	2.648;
200	38.09	0.136	167.5	32.88	35.82	0.151	49.0	11.92	5.938	20.1;

251 31.93 0.142 281.8 25.36 36.09 0.146 134.5 14.29 17.04 46.91; acute zone;
 300 21.64 0.155 452.8 18.8 36.19 0.15 354.9 16.2 42.92 104.5;
 319 16.31 0.166 539.9 15.84 36.21 0.154 517.0 16.82 60.15 140.7; matched energy radial
 vel = 0.106m/s;
 325 14.49 0.17 570.0 14.92 36.21 0.155 582.2 17.01 66.81 154.3; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.48 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 2.43E-5 41225.4 1416.6 100.0 2194.1 0.0 0.0 1.00E-5 3.00E-4
 1.61E-5 62056.0 2132.5 200.0 4971.9 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 39; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.003.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 24.14; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time

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Step      (ft)      (m/s)      (in)      (deg)      (psu)      (m/s)      ( )      (ft)      (ft)      (s)
0         46.0      0.0539     6.0       15.0      30.0      2.402     1.0      0.0      0.0      0.0;
100      44.41     0.082     42.18     18.65     35.39     0.344     7.203     5.387     0.423     2.741;
156      42.21     0.121     107.7     24.09     35.95     0.155     20.92     10.37     2.487     11.14; begin overlap;
195      40.63     0.133     162.7     20.84     36.1      0.131     40.29     12.68     5.43     20.12; end overlap;
200      40.37     0.133     171.7     20.06     36.11     0.13      44.49     12.98     6.047     21.83;
242      37.28     0.136     259.7     15.22     36.19     0.131     102.2     15.65     15.82     46.76; acute zone;
300      28.3      0.146     448.7     10.6      36.23     0.139     322.3     19.33     56.05     140.0;
333      20.11     0.159     609.4     6.902     36.24     0.144     619.5     21.25     109.5     256.4; trap level;
339      18.48     0.162     643.2     5.942     36.24     0.146     697.6     21.61     124.1     287.3; matched energy radial
vel = 0.106m/s;
342      17.67     0.164     660.7     5.451     36.24     0.147     740.3     21.79     132.4     304.7; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.78 m
conc dilutn width distnce time
(kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
2.32E-5 43161.2 1352.1 100.0 1641.4 0.0 0.0 1.00E-5 3.00E-4
1.41E-5 70816.5 2218.5 200.0 4419.2 0.0 0.0 1.00E-5 3.00E-4
count: 2

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/ UM3.

Case 40; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.003.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia P-elev V-angle H-angle Ports AcuteMZ ChrncMZ P-depth Ttl-flo Eff-sal Temp Polutnt
 (in) (ft) (deg) (deg) () (ft) (m) (ft) (MGD) (psu) (C) (kg/kg)
 6.0 3.0 45.0 0.0 1.0 22.0 200.0 46.0 1.0 60.0 28.0 1.0

Simulation:

Froude number: -15.79; effleunt density (sigma-T) 41.53; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)	
0	46.0	0.0539	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;	
100	42.45	0.117	45.22	35.72	39.53	0.304	7.343	3.901	0.507	2.683;	
123	41.65	0.132	66.27	26.89	38.5	0.208	10.69	5.099	1.039	4.586;	begin overlap;
183	40.88	0.133	107.7	-0.473	37.51	0.142	19.1	7.577	3.264	11.14;	local maximum rise or fall;
200	40.99	0.133	117.7	-8.705	37.33	0.139	22.24	8.35	4.299	13.97;	
216	41.33	0.132	130.9	-15.5	37.13	0.138	27.3	9.133	5.589	17.39;	end overlap;
260	45.43	0.0679	202.3	-31.17	36.63	0.135	63.79	11.94	14.06	39.31;	bottom hit;
272	48.19	0.0188	220.9	-38.02	36.57	0.133	75.09	12.83	17.92	50.36;	acute zone;
297	54.02	-0.0873	265.8	-52.58	36.5	0.118	97.41	14.14	23.65	69.87;	begin overlap;
300	54.5	-0.0959	273.6	-54.3	36.49	0.115	100.4	14.23	23.99	71.41;	
400	64.89	-0.284	390.0	-65.95	36.39	0.0949	166.5	15.75	25.59	106.6;	
483	72.73	-0.424	365.2	-19.36	36.33	0.191	290.7	16.58	15.48	137.3;	end overlap;
500	75.29	-0.469	368.7	-11.3	36.31	0.258	398.6	16.81	5.474	151.1;	
586	86.61	-0.673	595.1	-1.438	36.26	0.537	2188.5	17.6	-191.2	289.2;	stream limit reached;
593	87.44	-0.688	627.1	-1.214	36.26	0.555	2513.9	17.65	-227.7	309.5;	trap level;
600	88.23	-0.703	661.3	-1.014	36.26	0.573	2887.7	17.7	-269.0	331.8;	
642	91.48	-0.762	928.2	-0.156	36.25	0.668	6633.7	17.94	-656.3	519.6;	chronic zone;
654	91.67	-0.766	1029.3	0.0122	36.25	0.688	8413.1	18.0	-845.5	604.4;	local maximum rise or fall;
663	91.42	-0.763	1114.8	0.118	36.25	0.701	10054.4	18.05	-1038.5	689.0;	stop dilution reached;

/ UM3.

Case 41; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.003.db; Diffuser table record 5: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38

6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 24.66; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	44.17	0.0859	42.01	19.34	31.94	0.682	7.09	6.092	0.252	1.596;
200	35.1	0.139	214.3	38.65	35.65	0.191	51.05	18.98	6.517	20.48;
213	33.15	0.141	251.1	37.92	35.79	0.18	66.03	20.29	8.6	25.66; acute zone;
295	13.63	0.172	592.3	24.54	36.16	0.165	334.9	26.91	40.82	96.37; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.04 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
4.11E-5	24296.3	1508.6	100.0	2363.8	0.0	0.0	1.00E-5	3.00E-4
2.79E-5	35831.9	2224.9	200.0	5141.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 42; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.003.db; Diffuser table record 6: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39

4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	28.0	1.0

Simulation:

Froude number: 29.45; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	44.21	0.0853	42.3	18.08	33.32	0.677	7.135	6.145	0.254	1.611;
200	36.42	0.137	222.1	32.37	35.84	0.177	50.64	19.49	6.643	21.11;
209	35.31	0.139	248.4	31.9	35.9	0.169	60.52	20.47	8.097	24.78; acute zone;
300	15.7	0.168	636.4	19.56	36.19	0.157	366.8	28.86	49.52	116.8;
301	15.37	0.168	642.2	19.4	36.19	0.157	374.1	28.93	50.46	118.7; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.31 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.85E-5	25979.7	1565.6	100.0	2285.3	0.0	0.0	1.00E-5	3.00E-4
2.59E-5	38668.2	2330.2	200.0	5063.1	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 43; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.003.db; Diffuser table record 7: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38

3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 48.29; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.28	0.0842	42.72	16.13	35.39	0.67	7.203	6.225	0.258	1.635;
200	38.89	0.135	228.2	19.64	36.12	0.159	48.21	20.14	6.56	21.49;
206	38.48	0.135	245.2	19.22	36.13	0.154	53.82	20.84	7.48	23.89; acute zone;
300	24.5	0.15	648.0	10.82	36.23	0.142	344.8	33.0	63.46	152.7;
312	21.18	0.156	724.7	9.388	36.24	0.144	437.3	34.56	82.15	193.2; matched energy radial
vel = 0.103m/s;										
317	19.72	0.159	758.6	8.676	36.24	0.145	482.9	35.2	91.37	212.9; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 19.27 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.41E-5	29292.9	1615.4	100.0	1948.7	0.0	0.0	1.00E-5	3.00E-4
2.19E-5	45618.4	2515.7	200.0	4726.5	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 44; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.003.db; Diffuser table record 8: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
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m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrnMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -31.58; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	41.68	0.13	43.91	42.46	39.53	0.645	7.343	4.441	0.312	1.569;
161	37.09	0.137	134.5	25.44	37.32	0.213	22.56	10.24	2.831	8.783; begin overlap;
200	35.77	0.138	195.6	8.314	36.93	0.16	35.51	13.32	5.993	16.69;
218	35.6	0.138	221.4	-0.242	36.81	0.15	42.76	14.86	8.208	22.05; local maximum rise or fall;
232	35.78	0.138	243.6	-6.772	36.73	0.147	50.42	16.16	10.45	27.39; end overlap;
246	36.39	0.138	272.0	-12.85	36.64	0.145	62.23	17.6	13.52	34.61; acute zone;
278	40.68	0.133	370.2	-21.95	36.46	0.147	116.3	21.26	25.61	62.5; bottom hit;
300	47.68	0.0328	467.0	-28.08	36.39	0.14	177.7	23.94	40.65	98.01;
318	55.31	-0.108	558.2	-38.79	36.36	0.119	218.0	25.81	52.28	130.1; begin overlap;
400	68.2	-0.343	837.4	-80.88	36.33	0.0751	304.8	28.09	60.26	183.2;
500	78.93	-0.536	759.9	-35.21	36.31	0.118	390.1	29.6	54.35	228.3;
539	83.68	-0.62	637.4	-13.41	36.3	0.23	526.6	30.19	42.55	251.8; end overlap;
576	90.6	-0.744	639.3	-3.389	36.27	0.464	1084.5	31.02	-23.08	307.3; stream limit reached;
582	91.49	-0.76	655.7	-2.818	36.27	0.496	1221.3	31.12	-39.8	317.8; trap level;
600	93.87	-0.804	722.6	-1.647	36.26	0.582	1744.4	31.4	-104.5	354.1;

663 98.67 -0.892 1158.6 -0.0242 36.25 0.785 6073.6 32.19 -671.1 596.0; chronic zone;
 665 98.67 -0.892 1178.6 0.00235 36.25 0.789 6318.9 32.22 -706.5 609.7; local maximum rise or
 fall;
 689 96.66 -0.86 1461.1 0.22 36.25 0.824 10163.6 32.59 -1442.8 885.8; stop dilution reached;
 Outside chronic zone

/ UM3.

Case 45; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.003.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

Froude number: 37.0; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0539	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.17	0.086	42.32	17.11	31.94	1.007	7.09	6.465	0.182	1.145;
184	36.83	0.137	193.3	33.14	35.43	0.256	37.31	21.64	4.342	14.28; acute zone;
200	34.22	0.14	244.1	35.88	35.65	0.221	51.21	24.63	6.629	20.2;
283	14.03	0.171	636.3	27.56	36.14	0.17	264.9	36.03	34.91	83.29; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.16 m

conc	dilutn	width	distnce	time					
(kg/kg)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)	
5.34E-5	18721.5	1578.7	100.0	2353.0	0.0	0.0	1.00E-5	3.00E-4	
3.62E-5	27644.3	2331.2	200.0	5130.8	0.0	0.0	1.00E-5	3.00E-4	

count: 2

/ UM3.

Case 46; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.003.db; Diffuser table record 10: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 44.18; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0539	6.0	15.0	15.0	7.205	1.0	0.0	0.0	0.0;
100	44.19	0.0858	42.52	16.49	33.32	1.004	7.135	6.508	0.184	1.153;
182	37.86	0.136	192.8	27.83	35.67	0.249	36.12	21.65	4.188	13.98; acute zone;
200	35.4	0.138	252.8	30.17	35.84	0.207	51.44	25.18	6.808	20.84;

288 16.17 0.167 691.2 21.9 36.18 0.16 293.6 38.4 41.9 99.56; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.56 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 5.01E-5 19947.7 1648.2 100.0 2296.6 0.0 0.0 1.00E-5 3.00E-4
 3.37E-5 29650.1 2449.9 200.0 5074.4 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 47; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.003.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 72.43; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0539	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.21	0.0853	42.82	15.54	35.39	0.999	7.203	6.572	0.186	1.165;
180	39.29	0.134	194.0	18.94	36.07	0.239	35.1	21.81	4.048	13.8; acute zone;

200 37.53 0.136 263.4 19.21 36.13 0.19 51.25 25.93 6.98 21.6;
 283 26.01 0.148 682.0 12.44 36.23 0.144 257.7 41.54 45.45 110.7; matched energy radial
 vel = 0.0785m/s;
 284 25.78 0.148 688.6 12.36 36.23 0.144 262.8 41.74 46.5 113.1; matched energy radial
 vel = 0.08m/s;
 295 22.98 0.153 765.6 11.27 36.23 0.145 326.8 43.95 59.7 142.0; matched energy radial
 vel = 0.1m/s;
 300 21.61 0.155 802.6 10.68 36.23 0.145 360.8 44.95 66.75 157.2;
 302 21.05 0.157 817.8 10.43 36.23 0.146 375.4 45.34 69.77 163.7; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 20.77 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 4.37E-5 22906.7 1751.8 100.0 2073.2 0.0 0.0 1.00E-5 3.00E-4
 2.85E-5 35037.8 2679.6 200.0 4851.0 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 48; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.003.db; Diffuser table record 12: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.201	90.0	36.26	21.36	0.0	0.0	0.201	90.0	0.0003	25.38
0.914	0.195	90.0	36.26	21.35	0.0	0.0	0.195	90.0	0.0003	25.38
2.134	0.186	90.0	36.26	21.34	0.0	0.0	0.186	90.0	0.0003	25.38
3.048	0.18	90.0	36.26	21.32	0.0	0.0	0.18	90.0	0.0003	25.39
3.962	0.174	90.0	36.26	21.31	0.0	0.0	0.174	90.0	0.0003	25.39
4.877	0.168	90.0	36.25	21.3	0.0	0.0	0.168	90.0	0.0003	25.38
6.096	0.159	90.0	36.25	21.29	0.0	0.0	0.159	90.0	0.0003	25.39
7.468	0.15	90.0	36.25	21.27	0.0	0.0	0.15	90.0	0.0003	25.39
7.925	0.148	90.0	36.25	21.26	0.0	0.0	0.148	90.0	0.0003	25.4
9.144	0.144	90.0	36.25	21.25	0.0	0.0	0.144	90.0	0.0003	25.4
10.06	0.141	90.0	36.25	21.24	0.0	0.0	0.141	90.0	0.0003	25.4
10.97	0.138	90.0	36.25	21.22	0.0	0.0	0.138	90.0	0.0003	25.41
11.89	0.135	90.0	36.25	21.21	0.0	0.0	0.135	90.0	0.0003	25.41
12.7	0.132	90.0	36.25	21.2	0.0	0.0	0.132	90.0	0.0003	25.41
14.02	0.0539	90.0	36.25	21.19	0.0	0.0	0.0539	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -47.37; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0539	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	41.35	0.132	43.61	43.81	39.53	0.981	7.343	4.707	0.228	1.124;
182	32.54	0.141	201.3	24.92	36.95	0.217	34.25	15.38	4.699	12.94; begin overlap;
200	31.46	0.143	245.3	17.39	36.81	0.185	43.19	17.41	6.661	17.61;
221	30.6	0.144	294.1	7.933	36.69	0.164	54.91	19.88	9.736	24.76; acute zone;
239	30.35	0.144	335.5	-0.463	36.61	0.155	67.35	22.18	13.37	33.05; local maximum rise or fall;
244	30.39	0.144	347.8	-2.781	36.59	0.153	71.62	22.86	14.6	35.85; end overlap;
292	36.69	0.137	534.5	-20.04	36.39	0.151	166.4	30.74	37.85	87.32; bottom hit;
300	38.99	0.135	579.0	-21.07	36.37	0.151	195.0	31.97	43.83	100.5;
333	56.79	-0.133	859.7	-33.13	36.32	0.118	343.9	37.59	81.26	190.4; begin overlap;
400	70.33	-0.381	1327.8	-70.02	36.3	0.0656	447.6	40.38	93.19	256.2;
500	81.98	-0.59	1332.3	-48.64	36.3	0.0761	517.1	42.47	90.7	315.4;
516	83.73	-0.622	1268.9	-39.78	36.3	0.0867	533.0	42.78	88.9	325.0; trap level;
570	90.4	-0.741	907.6	-9.821	36.28	0.235	720.6	43.95	71.04	366.4; stream limit reached, end overlap;
600	95.91	-0.84	841.7	-2.316	36.27	0.483	1298.9	44.99	-3.543	426.6;
662	100.0	-0.916	1220.2	0.00705	36.26	0.775	4433.9	46.31	-433.5	620.8; local maximum rise or fall;
676	99.57	-0.909	1371.4	0.178	36.25	0.809	5850.5	46.61	-675.1	713.3; chronic zone;
694	96.56	-0.86	1613.2	0.259	36.25	0.833	8355.9	47.2	-1354.4	964.0; trap level;

Outside chronic zone

/ UM3.

Case 49; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.004.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4

9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	5.0	28.0	1.0

Simulation:

Froude number: 12.33; effleunt density (sigma-T) 0.034; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	5.0	2.402	1.0	0.0	0.0	0.0;
100	44.42	0.136	40.33	25.55	31.94	0.371	7.09	4.47	0.549	2.188;
144	42.82	0.184	77.83	32.15	34.36	0.229	16.15	6.875	1.883	5.678; begin overlap;
182	41.38	0.22	115.9	26.71	35.3	0.206	31.99	8.223	3.973	9.839; end overlap;
200	40.51	0.222	137.8	22.92	35.58	0.208	45.69	8.817	5.796	12.95;
255	35.87	0.23	230.0	16.46	36.03	0.222	135.7	10.65	19.39	33.37; acute zone;
300	28.81	0.242	351.1	12.85	36.16	0.232	330.8	11.94	46.89	71.39;
350	16.58	0.276	556.4	8.503	36.22	0.249	890.4	13.08	113.1	156.7; matched energy radial

vel = 0.174m/s;

355 15.13 0.281 581.5 8.032 36.22 0.252 983.1 13.17 123.2 169.1; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 14.77 m

concentration (kg/kg)	dilutn	width (m)	distance (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.63E-5	61381.9	1274.4	100.0	1728.9	0.0	0.0	1.00E-5	3.00E-4
1.00E-5	99098.4	2057.4	200.0	4506.6	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 50; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.004.db; Diffuser table record 2: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38

3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrcMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	15.0	28.0	1.0

Simulation:

Froude number: 14.73; effleunt density (sigma-T) 7.486; effleunt velocity 2.402(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	15.0	2.402	1.0	0.0	0.0	0.0;
100	44.51	0.134	40.93	22.56	33.32	0.362	7.135	4.539	0.559	2.23;
142	43.15	0.174	78.28	27.51	34.91	0.219	15.66	6.993	1.87	5.741; begin overlap;
184	41.74	0.216	121.0	22.58	35.61	0.193	32.75	8.63	4.293	10.74; end overlap;
200	41.06	0.221	140.3	19.32	35.79	0.198	44.95	9.206	6.0	13.74;
251	37.35	0.227	222.9	13.79	36.08	0.215	123.4	11.13	19.12	33.93; acute zone;
300	30.36	0.239	351.7	10.57	36.19	0.228	325.5	12.8	52.18	80.28;
355	17.2	0.274	583.1	6.428	36.23	0.247	967.4	14.31	142.4	197.4; matched energy radial

vel = 0.174m/s;

359 16.06 0.278 604.0 6.074 36.23 0.249 1047.1 14.41 152.9 210.4; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 15.34 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.68E-5	59681.9	1208.3	100.0	1477.6	0.0	0.0	1.00E-5	3.00E-4
9.87E-6	1.01E+5	2050.5	200.0	4255.4	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 51; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.004.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	1.0	30.0	28.0	1.0

Simulation:

Froude number: 24.14; effleunt density (sigma-T) 18.67; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0898	6.0	15.0	30.0	2.402	1.0	0.0	0.0	0.0;
100	44.65	0.13	41.78	17.59	35.39	0.351	7.203	4.642	0.573	2.294;
142	43.63	0.16	82.02	18.47	35.86	0.201	15.79	7.337	1.986	6.176; begin overlap;
182	42.69	0.188	124.7	14.73	36.05	0.172	30.96	9.193	4.459	11.68; end overlap;
200	42.14	0.204	147.9	12.1	36.11	0.175	44.17	10.04	6.633	15.91;
243	40.13	0.223	212.7	8.022	36.19	0.198	103.5	12.18	18.67	35.95; acute zone;
300	34.04	0.233	356.0	5.829	36.23	0.219	320.0	15.16	70.79	111.9;
347	24.71	0.249	549.8	3.315	36.24	0.232	811.5	17.47	191.6	274.9; trap level;
371	19.84	0.266	683.6	0.543	36.25	0.242	1305.3	18.86	344.1	470.5; matched energy radial
375	19.77	0.267	708.6	-0.16	36.25	0.244	1412.9	19.18	390.6	528.8; local maximum rise or fall;
391	24.2	0.252	821.5	-1.445	36.25	0.249	1939.6	20.4	607.6	796.9; trap level, matched
394	25.38	0.249	845.9	-1.201	36.25	0.249	2058.3	20.63	659.5	860.5; chronic zone;

energy radial vel = 0.176m/s;

398 26.47 0.247 880.2 -0.25 36.25 0.249 2228.0 21.05 758.0 981.1; bottom hit;
 399 26.32 0.247 889.0 0.209 36.25 0.249 2272.6 21.22 798.9 1031.4; local maximum rise or
 fall;
 Outside chronic zone

/ UM3.

Case 52; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.004.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	1.0	60.0	28.0	1.0

Simulation:

Froude number: -15.79; effleunt density (sigma-T) 41.53; effleunt velocity 2.402(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0898	6.0	45.0	60.0	2.402	1.0	0.0	0.0	0.0;
100	42.99	0.179	43.59	35.66	39.55	0.327	7.3	3.235	0.63	2.121;
113	42.66	0.189	52.96	31.62	38.93	0.274	8.996	3.667	0.894	2.746; begin overlap;
182	41.55	0.22	98.61	6.146	37.34	0.196	22.1	5.703	3.687	8.034; end overlap;
198	41.47	0.22	112.5	-0.197	37.08	0.198	28.96	6.379	5.558	11.12; local maximum rise or fall;

200	41.47	0.22	114.4	-1.06	37.05	0.198	30.02	6.488	5.917	11.69;
249	43.85	0.157	184.2	-13.21	36.55	0.201	79.09	9.015	20.48	34.12; acute zone;
255	44.54	0.137	197.6	-14.31	36.52	0.196	89.07	9.311	23.27	38.56; bottom hit;
293	53.63	-0.134	345.7	-32.48	36.39	0.122	172.5	11.37	46.48	84.63; begin overlap;
300	54.57	-0.163	378.4	-36.53	36.38	0.109	183.9	11.5	47.83	88.99;
400	62.58	-0.405	556.9	-82.55	36.35	0.0692	248.0	12.46	52.46	125.7;
500	69.02	-0.596	440.3	-23.61	36.32	0.153	334.7	13.05	46.9	154.8;
517	70.37	-0.637	396.4	-13.55	36.31	0.227	401.9	13.16	42.62	162.0; end overlap;
600	78.71	-0.887	508.9	-1.154	36.26	0.69	2055.7	13.75	-116.7	256.2;
625	80.55	-0.942	613.3	-0.645	36.26	0.779	3372.6	13.86	-241.2	307.4; trap level;
629	80.83	-0.951	632.9	-0.585	36.26	0.791	3650.6	13.87	-266.9	317.4; stream limit reached;
669	83.03	-1.017	881.1	-0.16	36.25	0.9	8060.6	14.02	-660.2	457.6; chronic zone;
680	83.37	-1.028	969.4	-0.078	36.25	0.924	10022.4	14.05	-834.0	515.6; stop dilution reached;

Outside chronic zone

/ UM3.

Case 53; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.004.db; Diffuser table record 5: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	5.0	28.0	1.0

Simulation:

Froude number: 24.66; effleunt density (sigma-T) 0.034; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	5.0	4.804	1.0	0.0	0.0	0.0;
100	44.35	0.138	41.94	18.75	31.94	0.684	7.09	5.555	0.369	1.427;
161	41.6	0.22	117.4	26.2	34.91	0.283	22.71	11.53	2.654	6.774; begin overlap;
192	40.08	0.223	166.8	24.51	35.46	0.239	38.63	13.61	5.026	10.96; end overlap;
200	39.59	0.223	182.7	23.5	35.58	0.233	45.19	14.16	5.984	12.53;
239	36.26	0.229	273.3	18.96	35.94	0.227	97.8	16.88	14.33	25.14; acute zone;
300	25.47	0.248	488.3	14.02	36.16	0.238	327.3	20.93	51.86	76.72;
325	18.45	0.27	614.6	11.66	36.19	0.246	536.9	22.33	82.79	116.7; matched energy radial

vel = 0.171m/s;

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
331	16.57	0.276	648.3	11.02	36.2	0.249	604.6	22.63	92.2	128.5; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 16.47 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.57E-5	38901.6	1464.1	100.0	1973.9	0.0	0.0	1.00E-5	3.00E-4
1.66E-5	60354.3	2271.6	200.0	4751.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 54; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.004.db; Diffuser table record 6: -----

Ambient Table:

Depth (m)	Amb-cur (m/s)	Amb-dir (deg)	Amb-sal (psu)	Amb-tem (C)	Amb-pol (kg/kg)	Decay (s-1)	Far-spnd (m/s)	Far-dir (deg)	Disprsn (m0.67/s2)	Density (sigma-T)
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	15.0	28.0	1.0

Simulation:

Froude number: 29.45; effleunt density (sigma-T) 7.486; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	15.0	4.804	1.0	0.0	0.0	0.0;
100	44.39	0.137	42.2	17.63	33.32	0.68	7.135	5.601	0.372	1.44;
162	41.83	0.214	121.4	22.68	35.35	0.271	23.26	11.86	2.783	7.112; begin overlap;
198	40.27	0.222	179.8	20.12	35.76	0.227	42.6	14.36	5.804	12.45; end overlap;
200	40.16	0.223	183.8	19.86	35.78	0.226	44.29	14.51	6.061	12.88;
236	37.59	0.227	266.4	15.76	36.02	0.22	90.32	17.23	13.82	24.79; acute zone;
300	27.53	0.244	488.7	11.44	36.18	0.233	320.7	22.15	56.81	84.57;
331	19.1	0.268	650.0	9.02	36.21	0.243	592.6	24.21	103.7	145.7; matched energy radial

vel = 0.172m/s;

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
335	17.87	0.272	673.5	8.639	36.22	0.245	641.4	24.45	111.7	155.8; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.11 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.56E-5	39018.8	1438.2	100.0	1809.9	0.0	0.0	1.00E-5	3.00E-4
1.61E-5	62118.4	2289.6	200.0	4587.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 55; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.004.db; Diffuser table record 7: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4

10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	2.0	30.0	28.0	1.0

Simulation:

Froude number: 48.29; effleunt density (sigma-T) 18.67; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	30.0	4.804	1.0	0.0	0.0	0.0;
100	44.44	0.136	42.59	15.89	35.39	0.674	7.203	5.669	0.377	1.46;
163	42.28	0.2	127.0	16.37	35.99	0.255	23.95	12.36	2.974	7.646; begin overlap;
200	41.13	0.221	186.8	13.07	36.11	0.214	43.28	15.16	6.272	13.68;
202	41.06	0.221	190.6	12.82	36.11	0.213	44.89	15.31	6.538	14.13; end overlap;
231	39.71	0.223	255.8	9.57	36.17	0.21	79.4	17.88	13.12	24.59; acute zone;
300	32.12	0.236	490.8	6.083	36.23	0.224	311.3	25.26	72.76	109.4;
340	23.02	0.254	711.7	3.876	36.24	0.235	687.4	29.7	178.7	250.4; trap level;
345	21.7	0.259	744.9	3.421	36.24	0.237	759.0	30.27	199.7	277.7; matched energy radial
vel = 0.169m/s;										
349	20.65	0.262	772.3	3.012	36.24	0.239	821.5	30.73	218.6	301.9; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 19.62 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.96E-5	33829.3	1116.3	100.0	908.4	0.0	0.0	1.00E-5	3.00E-4
1.46E-5	68137.2	2248.4	200.0	3686.2	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 56; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.004.db; Diffuser table record 8: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38

3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChronicMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	2.0	60.0	28.0	1.0

Simulation:

Froude number: -31.58; effleunt density (sigma-T) 41.53; effleunt velocity 4.804(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	45.0	60.0	4.804	1.0	0.0	0.0	0.0;
100	42.13	0.204	43.56	42.1	39.53	0.656	7.343	3.959	0.434	1.361;
145	39.69	0.223	95.3	31.14	37.67	0.319	16.92	6.729	1.945	4.19; begin overlap;
195	37.91	0.226	163.9	12.92	36.92	0.232	36.14	9.312	5.702	10.03; end overlap;
200	37.76	0.227	172.4	10.98	36.86	0.229	39.39	9.607	6.375	11.02;
227	37.16	0.228	227.3	-0.387	36.61	0.221	66.08	12.03	14.36	22.5; local maximum rise or fall;
234	37.32	0.228	243.3	-3.429	36.57	0.222	75.9	12.94	18.42	28.24; acute zone;
268	40.55	0.222	337.7	-10.31	36.41	0.226	148.8	16.31	41.38	60.12; bottom hit;
300	49.26	0.00824	495.4	-15.44	36.34	0.195	280.5	19.31	80.61	117.3;
316	55.87	-0.199	706.5	-24.37	36.31	0.126	374.7	20.64	99.87	155.1; begin overlap;
400	66.12	-0.51	1222.6	-71.79	36.3	0.0559	484.1	22.19	111.3	215.4;
500	73.51	-0.731	1149.6	-48.69	36.3	0.0706	535.9	23.13	109.5	257.5;
568	79.23	-0.902	711.4	-9.217	36.28	0.256	721.6	23.81	95.63	293.0; end overlap;
588	81.89	-0.981	628.8	-3.362	36.27	0.477	1067.2	24.12	65.21	317.3; trap level;
600	83.33	-1.024	635.8	-2.138	36.27	0.588	1353.5	24.29	33.91	335.1;
615	84.63	-1.064	671.8	-1.3	36.26	0.705	1821.6	24.44	-11.58	356.4; stream limit reached;
690	88.36	-1.178	1155.6	-0.0454	36.25	1.044	8044.0	25.01	-658.7	566.3; chronic zone;
698	88.41	-1.18	1239.0	0.00575	36.25	1.064	9424.8	25.07	-824.5	614.2; local maximum rise or fall;
700	88.39	-1.179	1261.0	0.0176	36.25	1.069	9805.6	25.09	-872.2	627.8;

701 88.38 -1.179 1272.3 0.0233 36.25 1.071 10001.7 25.09 -897.2 634.9; stop dilution reached;
 Outside chronic zone

/ UM3.

Case 57; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.004.db; Diffuser table record 9: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	5.0	28.0	1.0

Simulation:

Froude number: 37.0; effleunt density (sigma-T) 0.034; effleunt velocity 7.205(m/s);

Step	Depth	Amb-cur	P-dia	V-angle	Eff-sal	P-speed	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(in)	(deg)	(psu)	(m/s)	()	(ft)	(ft)	(s)
0	46.0	0.0898	6.0	15.0	5.0	7.205	1.0	0.0	0.0	0.0;
100	44.3	0.14	42.28	16.88	31.94	1.009	7.09	6.037	0.276	1.053;
200	38.69	0.225	215.9	23.09	35.6	0.261	47.2	18.48	6.358	12.63;
216	37.36	0.227	261.2	21.69	35.78	0.245	64.58	20.16	9.104	16.86; acute zone;
299	23.05	0.254	599.4	14.42	36.16	0.241	334.0	28.75	55.13	80.04; matched energy radial
300	22.77	0.255	605.0	14.33	36.16	0.242	340.7	28.85	56.25	81.5; matched energy radial

vel = 0.131m/s;
 vel = 0.134m/s;

310 19.77 0.265 663.2 13.36 36.18 0.245 415.3 29.76 68.4 97.19; matched energy radial
 vel = 0.171m/s;
 316 17.86 0.272 700.1 12.72 36.18 0.248 467.7 30.29 76.68 107.7; surface;
 Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 17.78 m
 conc dilutn width distnce time
 (kg/kg) (m) (m) (hrs) (kg/kg) (s-1) (m/s)(m0.67/s2)
 3.32E-5 30107.0 1581.9 100.0 2079.7 0.0 0.0 1.00E-5 3.00E-4
 2.17E-5 46010.2 2417.5 200.0 4857.5 0.0 0.0 1.00E-5 3.00E-4
 count: 2

/ UM3.

Case 58; ambient file C:\Plumes\Proj\OO\OO_WINT_49ft_UNIa.004.db; Diffuser table record 10: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spnd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChrncMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	15.0	28.0	1.0

Simulation:

Froude number: 44.18; effleunt density (sigma-T) 7.486; effleunt velocity 7.205(m/s);
 Depth Amb-cur P-dia V-angle Eff-sal P-speed Dilutn x-posn y-posn Time
 Step (ft) (m/s) (in) (deg) (psu) (m/s) () (ft) (ft) (s)
 0 46.0 0.0898 6.0 15.0 15.0 7.205 1.0 0.0 0.0 0.0;


```

100    44.31    0.139    42.47    16.32    33.32    1.006    7.135    6.076    0.278    1.06;
200    39.29    0.224    217.2    19.53    35.8     0.255    46.67    18.69    6.338    12.71;
215    38.26    0.226    259.1    18.17    35.91    0.24     62.21    20.32    8.879    16.67; acute zone;
300    25.26    0.248    606.7    11.66    36.19    0.236    334.8    30.19    61.03    88.85;
315    20.96    0.261    697.0    10.51    36.2     0.241    450.6    31.82    82.96    117.5; matched energy radial
vel = 0.167m/s;
321    19.09    0.268    735.8    9.957    36.21    0.244    507.4    32.44    93.37    130.8; surface;
Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 18.69 m
  conc dilutn  width distance  time
(kg/kg)      (m)      (m)      (hrs) (kg/kg)  (s-1)  (m/s)(m0.67/s2)
3.22E-5 31035.2 1579.7 100.0 1940.9 0.0    0.0 1.00E-5 3.00E-4
2.07E-5 48388.9 2463.1 200.0 4718.6 0.0    0.0 1.00E-5 3.00E-4
count: 2

```

/ UM3.

Case 59; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.004.db; Diffuser table record 11: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(in)	(ft)	(deg)	(deg)	()	(ft)	(m)	(ft)	(MGD)	(psu)	(C)	(kg/kg)
6.0	3.0	15.0	0.0	1.0	22.0	200.0	46.0	3.0	30.0	28.0	1.0

Simulation:

Froude number: 72.43; effleunt density (sigma-T) 18.67; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	15.0	30.0	7.205	1.0	0.0	0.0	0.0;
100	44.33	0.139	42.77	15.44	35.39	1.002	7.203	6.134	0.281	1.071;
183	40.9	0.221	179.9	14.96	36.07	0.276	34.65	17.28	4.434	9.748; begin overlap;
200	40.22	0.222	218.8	13.58	36.11	0.247	45.92	19.1	6.374	12.98;
205	40.01	0.223	231.5	13.09	36.13	0.241	50.11	19.65	7.095	14.14; end overlap;
212	39.69	0.223	250.4	12.35	36.14	0.235	56.93	20.44	8.287	16.03; acute zone;
300	30.45	0.239	608.7	6.111	36.23	0.227	324.5	33.56	75.0	109.9;
330	23.37	0.253	805.6	4.505	36.24	0.235	587.7	38.71	151.8	211.7; matched energy radial

vel = 0.169m/s;

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
334	22.27	0.257	835.7	4.18	36.24	0.237	636.2	39.4	166.4	230.6; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 21.23 m

conc (kg/kg)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.24E-5	30871.4	1423.6	100.0	1330.0	0.0	0.0	1.00E-5	3.00E-4
1.84E-5	54250.5	2501.7	200.0	4107.7	0.0	0.0	1.00E-5	3.00E-4

count: 2

/ UM3.

Case 60; ambient file C:\Plumes\Proj\00\00_WINT_49ft_UNIa.004.db; Diffuser table record 12: -----

Ambient Table:

Depth m	Amb-cur m/s	Amb-dir deg	Amb-sal psu	Amb-tem C	Amb-pol kg/kg	Decay s-1	Far-spd m/s	Far-dir deg	Disprsn m0.67/s2	Density sigma-T
0.0	0.335	90.0	36.26	21.36	0.0	0.0	0.335	90.0	0.0003	25.38
0.914	0.325	90.0	36.26	21.35	0.0	0.0	0.325	90.0	0.0003	25.38
2.134	0.311	90.0	36.26	21.34	0.0	0.0	0.311	90.0	0.0003	25.38
3.048	0.3	90.0	36.26	21.32	0.0	0.0	0.3	90.0	0.0003	25.39
3.962	0.29	90.0	36.26	21.31	0.0	0.0	0.29	90.0	0.0003	25.39
4.877	0.279	90.0	36.25	21.3	0.0	0.0	0.279	90.0	0.0003	25.38
6.096	0.266	90.0	36.25	21.29	0.0	0.0	0.266	90.0	0.0003	25.39
7.468	0.25	90.0	36.25	21.27	0.0	0.0	0.25	90.0	0.0003	25.39
7.925	0.247	90.0	36.25	21.26	0.0	0.0	0.247	90.0	0.0003	25.4
9.144	0.24	90.0	36.25	21.25	0.0	0.0	0.24	90.0	0.0003	25.4
10.06	0.235	90.0	36.25	21.24	0.0	0.0	0.235	90.0	0.0003	25.4
10.97	0.23	90.0	36.25	21.22	0.0	0.0	0.23	90.0	0.0003	25.41
11.89	0.225	90.0	36.25	21.21	0.0	0.0	0.225	90.0	0.0003	25.41
12.7	0.22	90.0	36.25	21.2	0.0	0.0	0.22	90.0	0.0003	25.41
14.02	0.0898	90.0	36.25	21.19	0.0	0.0	0.0898	90.0	0.0003	25.41
14.94	0.0	90.0	36.25	21.18	0.0	0.0	0.00001	90.0	0.0003	25.42

Diffuser table:

P-dia (in)	P-elev (ft)	V-angle (deg)	H-angle (deg)	Ports ()	AcuteMZ (ft)	ChronicMZ (m)	P-depth (ft)	Ttl-flo (MGD)	Eff-sal (psu)	Temp (C)	Polutnt (kg/kg)
6.0	3.0	45.0	0.0	1.0	22.0	200.0	46.0	3.0	60.0	28.0	1.0

Simulation:

Froude number: -47.37; effleunt density (sigma-T) 41.53; effleunt velocity 7.205(m/s);

Step	Depth (ft)	Amb-cur (m/s)	P-dia (in)	V-angle (deg)	Eff-sal (psu)	P-speed (m/s)	Dilutn ()	x-posn (ft)	y-posn (ft)	Time (s)
0	46.0	0.0898	6.0	45.0	60.0	7.205	1.0	0.0	0.0	0.0;
100	41.74	0.215	43.46	43.6	39.53	0.989	7.343	4.312	0.331	1.008;
168	36.39	0.229	146.6	29.26	37.15	0.319	26.73	10.23	3.513	6.363; begin overlap;
200	34.64	0.232	211.3	17.64	36.8	0.255	44.04	12.6	6.84	11.25;
207	34.3	0.233	227.5	14.96	36.74	0.247	49.51	13.15	7.91	12.78; end overlap;
233	33.07	0.235	300.1	4.587	36.55	0.232	80.59	15.85	15.39	23.17; acute zone;
244	32.83	0.235	335.8	-0.12	36.49	0.231	100.2	17.63	22.43	32.77; local maximum rise or fall;
281	37.0	0.228	481.5	-9.411	36.37	0.233	208.5	23.51	59.91	82.98; bottom hit;
300	41.61	0.221	582.5	-10.59	36.33	0.232	303.8	25.79	85.52	117.2;
333	57.39	-0.243	1071.3	-20.6	36.29	0.126	575.6	30.03	151.6	222.8; begin overlap;
400	67.9	-0.562	1946.2	-58.46	36.28	0.0485	713.0	31.98	166.9	298.7;
439	71.44	-0.669	2141.2	-77.57	36.28	0.0415	734.7	32.6	168.1	325.0; trap level;
461	73.26	-0.724	2180.1	-78.91	36.28	0.0406	744.3	32.92	168.2	338.9; matched energy radial
vel = 0.0252m/s;										
500	76.07	-0.808	2125.0	-60.96	36.28	0.0439	760.9	33.41	167.3	360.7;
539	78.87	-0.892	1900.6	-39.53	36.28	0.0567	782.6	33.92	165.0	383.6; matched energy radial
vel = 0.0285m/s;										
600	83.95	-1.043	1046.9	-5.733	36.27	0.25	996.5	34.9	147.4	432.4;
601	84.06	-1.046	1026.3	-5.267	36.27	0.266	1016.4	34.92	146.2	433.8; end overlap;
610	85.0	-1.075	909.0	-2.816	36.27	0.395	1214.7	35.12	131.3	447.2; stream limit reached;
687	88.31	-1.177	1211.7	0.00603	36.25	0.99	5580.5	36.23	-324.0	621.2; local maximum rise or fall;
700	88.12	-1.172	1349.1	0.0819	36.25	1.032	7218.9	36.4	-536.6	685.1;
706	87.89	-1.165	1420.7	0.11	36.25	1.047	8129.7	36.49	-671.1	724.5; chronic zone;
717	87.05	-1.142	1567.7	0.147	36.25	1.068	10108.2	36.68	-1029.1	827.4; stop dilution reached;

Outside chronic zone
;

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CH2M HILL Parametric Cost Estimating System (CPES)

CONVEYANCE MODULE

Project Name:	<u>SJRWMD</u>	
Project Number:	<u>341646</u>	To Sketch of Pi
Project Manager:	<u>Mitch Griffin</u>	
Estimator:	<u>Marc Ischen</u>	To Conveyance
Project Description:	<u>Ocean Outfall Study</u>	
Project Location (City):	<u>Flagler County - 20" Pipeline</u>	
Project Location (State):	<u>Florida</u>	Click for CPE:
Project Location (Country):	<u>USA</u>	
Construction Start Date:	<u>Jan-07</u>	
Construction Duration (months):	<u>12</u>	
Mid-Point of Construction:	<u>Jul-07</u>	Roundup to the nearest:

Item	Is this Item Included in the Project? (Yes or No)	DESCRIPTION	Cost
Pipe Segment 1	Yes	Onshore Segment	\$4,910,000
Pipe Segment 2	Yes	Offshore Segment	\$9,680,000
Pipe Segment 3	Yes	Manifold	\$50,000
Pipe Segment 4	Yes	Subaqueous Waterway Crossing	\$230,000
Pipe Segment 5	No	Segment 5 Description	\$0
Pipe Segment 6	No	Segment 6 Description	\$0
Pipe Segment 7	No	Segment 7 Description	\$0
Pipe Segment 8	No	Segment 8 Description	\$0
Pipe Segment 9	No	Segment 9 Description	\$0
Trenchless Technology	No	Trenchless Technology	\$0
Reservoir #1	Yes	6 Hour Storage Tank	\$360,000
Reservoir #2	No	Reservoir #2 Description	\$0
Reservoir #3	No	Reservoir #3 Description	\$0
Pump Station #1	Yes	Outfall Pump Station	\$940,000
Pump Station #2	No	Pump Station #2 Description	\$0
Pump Station #3	No	Pump Station #3 Description	\$0

SUBTOTAL - PROJECT COST \$16,170,000

ADDITIONAL PROJECT COSTS:

Demolition	0%		\$0
Overall Sitework	0%		\$0
Plant Computer System	0%		\$0
Yard Electrical	0%		\$0
Yard Piping	0%		\$0
0	0%		\$0
0	0%		\$0
0	0%		\$0

SUBTOTAL with Additional Project Costs \$16,170,000

CONTRACTOR MARKUPS:

Overhead	10%		\$1,617,000
Subtotal			\$17,787,000
Profit	5%		\$889,350
Subtotal			\$18,676,350
Mob/Bonds/Insurance	5%		\$933,818
Subtotal			\$19,610,168
Contingency	25%		\$4,902,542

SUBTOTAL with Markups \$24,512,709

ESCALATION (to Mid-Point of Construction): 15.00% \$24,512,709 \$3,676,906

SUBTOTAL with Escalation \$28,189,616

LOCATION ADJUSTMENT FACTOR 100.00% \$28,189,616 \$28,189,616

SUBTOTAL - with Local Adjustment Factor \$28,189,616

Did a CH2M HILL Professional Estimator Review This Cost Estimate? If Yes, by whom?

Yes
Bredehoeft

MAXIMUM CONSTRUCTION COST \$28,189,616

NON-CONSTRUCTION COSTS:

Permitting	3%		\$845,688
Engineering	10%		\$2,818,962
SDC	8%		\$2,255,169
Commissioning & Startup	1%		\$281,896
Land ROW	5%		\$1,409,481
Legal/Admin	1%		\$281,896
0	1%		\$281,896

SUBTOTAL - Non-Construction Costs \$8,174,989

TOTAL - CAPITAL COST \$36,364,604

Currency Conversion of TOTAL CAPITAL COST:

Currency	Unit of Measure	Conversion Rate	Converted Amount
None	U.S.Dollar	1	36,364,604

Note: Unless otherwise stated, this order of magnitude cost opinion does not include any costs associated with the potential discovery of hazardous materials. The cost opinion shown has been prepared for guidance in project evaluation from the information available at the time of preparation. The final costs of the project will depend on actual labor and material costs, actual site conditions, productivity, competitive market conditions, final project scope, final project schedule and other variable factors. As a result, the final project costs will vary from the cost presented above. Because of these factors, funding needs must be carefully reviewed prior to making specific financial decisions or establishing final budgets.

CH2M HILL Parametric Cost Estimating System (CPES)

CONVEYANCE MODULE

Project Name:	<u>SJRWMD</u>	
Project Number:	<u>341646</u>	To Sketch of Pi
Project Manager:	<u>Mitch Griffin</u>	
Estimator:	<u>Marc Ischen</u>	To Conveyance
Project Description:	<u>Ocean Outfall Study</u>	
Project Location (City):	<u>Flagler County - 42" Pipeline</u>	
Project Location (State):	<u>Florida</u>	Click for CPE:
Project Location (Country):	<u>USA</u>	
Construction Start Date:	<u>Jan-07</u>	
Construction Duration (months):	<u>12</u>	
Mid-Point of Construction:	<u>Jul-07</u>	Roundup to the nearest:

Item	Is this Item Included in the Project? (Yes or No)	DESCRIPTION	Cost
Pipe Segment 1	Yes	Onshore Segment	\$8,630,000
Pipe Segment 2	Yes	Offshore Segment	\$12,930,000
Pipe Segment 3	Yes	Manifold	\$140,000
Pipe Segment 4	Yes	Subaqueous Waterway Crossing	\$320,000
Pipe Segment 5	No	Segment 5 Description	\$0
Pipe Segment 6	No	Segment 6 Description	\$0
Pipe Segment 7	No	Segment 7 Description	\$0
Pipe Segment 8	No	Segment 8 Description	\$0
Pipe Segment 9	No	Segment 9 Description	\$0
Trenchless Technology	No	Trenchless Technology	\$0
Reservoir #1	Yes	6 Hour Storage Tank	\$1,560,000
Reservoir #2	No	Reservoir #2 Description	\$0
Reservoir #3	No	Reservoir #3 Description	\$0
Pump Station #1	Yes	Outfall Pump Station	\$2,080,000
Pump Station #2	No	Pump Station #2 Description	\$0
Pump Station #3	No	Pump Station #3 Description	\$0

SUBTOTAL - PROJECT COST \$25,660,000

ADDITIONAL PROJECT COSTS:

Demolition	0%		\$0
Overall Sitework	0%		\$0
Plant Computer System	0%		\$0
Yard Electrical	0%		\$0
Yard Piping	0%		\$0
0	0%		\$0
0	0%		\$0
0	0%		\$0

SUBTOTAL with Additional Project Costs \$25,660,000

CONTRACTOR MARKUPS:

Overhead	10%		\$2,566,000
Subtotal			\$28,226,000
Profit	5%		\$1,411,300
Subtotal			\$29,637,300
Mob/Bonds/Insurance	5%		\$1,481,865
Subtotal			\$31,119,165
Contingency	25%		\$7,779,791

SUBTOTAL with Markups \$38,898,956

ESCALATION (to Mid-Point of Construction): 15.00% \$38,898,956 \$5,834,843

SUBTOTAL with Escalation \$44,733,800

LOCATION ADJUSTMENT FACTOR 100.00% \$44,733,800 \$44,733,800

SUBTOTAL - with Local Adjustment Factor \$44,733,800

Did a CH2M HILL Professional Estimator Review This Cost Estimate? If Yes, by whom?

Yes
Bredehoeft

MAXIMUM CONSTRUCTION COST \$44,733,800

NON-CONSTRUCTION COSTS:

Permitting	3%		\$1,342,014
Engineering	10%		\$4,473,380
SDC	8%		\$3,578,704
Commissioning & Startup	1%		\$447,338
Land ROW	5%		\$2,236,690
Legal/Admin	1%		\$447,338
0	1%		\$447,338

SUBTOTAL - Non-Construction Costs \$12,972,802

TOTAL - CAPITAL COST \$57,706,602

Currency Conversion of TOTAL CAPITAL COST:

Currency	Unit of Measure	Conversion Rate	Converted Amount
None	U.S.Dollar	1	57,706,602

Note: Unless otherwise stated, this order of magnitude cost opinion does not include any costs associated with the potential discovery of hazardous materials. The cost opinion shown has been prepared for guidance in project evaluation from the information available at the time of preparation. The final costs of the project will depend on actual labor and material costs, actual site conditions, productivity, competitive market conditions, final project scope, final project schedule and other variable factors. As a result, the final project costs will vary from the cost presented above. Because of these factors, funding needs must be carefully reviewed prior to making specific financial decisions or establishing final budgets.

CH2M HILL Parametric Cost Estimating System (CPES)

CONVEYANCE MODULE

Project Name:	<u>SJRWMD</u>	
Project Number:	<u>341646</u>	To Sketch of Pi
Project Manager:	<u>Mitch Griffin</u>	
Estimator:	<u>Marc Ischen</u>	To Conveyance
Project Description:	<u>Ocean Outfall Study</u>	
Project Location (City):	<u>Port Canaveral - 20" Pipeline</u>	
Project Location (State):	<u>Florida</u>	Click for CPE:
Project Location (Country):	<u>USA</u>	
Construction Start Date:	<u>Jan-07</u>	
Construction Duration (months):	<u>12</u>	
Mid-Point of Construction:	<u>Jul-07</u>	Roundup to the nearest:

Item	Is this Item Included in the Project? (Yes or No)	DESCRIPTION	Cost
Pipe Segment 1	Yes	Onshore Segment	\$900,000
Pipe Segment 2	Yes	Offshore Segment	\$19,330,000
Pipe Segment 3	Yes	Manifold	\$50,000
Pipe Segment 4	Yes	Subaqueous Waterway Crossing	\$0
Pipe Segment 5	No	Segment 5 Description	\$0
Pipe Segment 6	No	Segment 6 Description	\$0
Pipe Segment 7	No	Segment 7 Description	\$0
Pipe Segment 8	No	Segment 8 Description	\$0
Pipe Segment 9	No	Segment 9 Description	\$0
Trenchless Technology	No	Trenchless Technology	\$0
Reservoir #1	Yes	6 Hour Storage Tank	\$360,000
Reservoir #2	No	Reservoir #2 Description	\$0
Reservoir #3	No	Reservoir #3 Description	\$0
Pump Station #1	Yes	Outfall Pump Station	\$700,000
Pump Station #2	No	Pump Station #2 Description	\$0
Pump Station #3	No	Pump Station #3 Description	\$0

SUBTOTAL - PROJECT COST \$21,340,000

ADDITIONAL PROJECT COSTS:

Demolition	0%		\$0
Overall Sitework	0%		\$0
Plant Computer System	0%		\$0
Yard Electrical	0%		\$0
Yard Piping	0%		\$0
0	0%		\$0
0	0%		\$0
0	0%		\$0

SUBTOTAL with Additional Project Costs \$21,340,000

CONTRACTOR MARKUPS:

Overhead	10%		\$21,340,000		\$2,134,000
Subtotal					\$23,474,000
Profit	5%		\$23,474,000		\$1,173,700
Subtotal					\$24,647,700
Mob/Bonds/Insurance	5%		\$24,647,700		\$1,232,385
Subtotal					\$25,880,085
Contingency	25%		\$25,880,085		\$6,470,021

SUBTOTAL with Markups \$32,350,106

ESCALATION (to Mid-Point of Construction): 15.00% \$32,350,106 \$4,852,516

SUBTOTAL with Escalation \$37,202,622

LOCATION ADJUSTMENT FACTOR 100.00% \$37,202,622 \$37,202,622

SUBTOTAL - with Local Adjustment Factor \$37,202,622

Did a CH2M HILL Professional Estimator Review This Cost Estimate? If Yes, by whom?

Yes
Bredehoeft

MAXIMUM CONSTRUCTION COST \$37,202,622

NON-CONSTRUCTION COSTS:

Permitting	3%		\$37,202,622		\$1,116,079
Engineering	10%		\$37,202,622		\$3,720,262
SDC	8%		\$37,202,622		\$2,976,210
Commissioning & Startup	1%		\$37,202,622		\$372,026
Land ROW	5%		\$37,202,622		\$1,860,131
Legal/Admin	1%		\$37,202,622		\$372,026
0	1%		\$37,202,622		\$372,026

SUBTOTAL - Non-Construction Costs \$10,788,760

TOTAL - CAPITAL COST \$47,991,383

Currency Conversion of TOTAL CAPITAL COST:

Currency	Unit of Measure	Conversion Rate	Converted Amount
None	U.S.Dollar	1	47,991,383

Note: Unless otherwise stated, this order of magnitude cost opinion does not include any costs associated with the potential discovery of hazardous materials. The cost opinion shown has been prepared for guidance in project evaluation from the information available at the time of preparation. The final costs of the project will depend on actual labor and material costs, actual site conditions, productivity, competitive market conditions, final project scope, final project schedule and other variable factors. As a result, the final project costs will vary from the cost presented above. Because of these factors, funding needs must be carefully reviewed prior to making specific financial decisions or establishing final budgets.

CH2M HILL Parametric Cost Estimating System (CPES)

CONVEYANCE MODULE

Project Name:	<u>SJRWMD</u>	
Project Number:	<u>341646</u>	To Sketch of Pi
Project Manager:	<u>Mitch Griffin</u>	
Estimator:	<u>Marc Ischen</u>	To Conveyance
Project Description:	<u>Ocean Outfall Study</u>	
Project Location (City):	<u>Port Canaveral - 42" Pipeline</u>	
Project Location (State):	<u>Florida</u>	Click for CPE:
Project Location (Country):	<u>USA</u>	
Construction Start Date:	<u>Jan-07</u>	
Construction Duration (months):	<u>12</u>	
Mid-Point of Construction:	<u>Jul-07</u>	Roundup to the nearest:

Item	Is this Item Included in the Project? (Yes or No)	DESCRIPTION	Cost
Pipe Segment 1	Yes	Onshore Segment	\$1,560,000
Pipe Segment 2	Yes	Offshore Segment	\$25,820,000
Pipe Segment 3	Yes	Manifold	\$190,000
Pipe Segment 4	Yes	Subaqueous Waterway Crossing	\$0
Pipe Segment 5	No	Segment 5 Description	\$0
Pipe Segment 6	No	Segment 6 Description	\$0
Pipe Segment 7	No	Segment 7 Description	\$0
Pipe Segment 8	No	Segment 8 Description	\$0
Pipe Segment 9	No	Segment 9 Description	\$0
Trenchless Technology	No	Trenchless Technology	\$0
Reservoir #1	Yes	6 Hour Storage Tank	\$1,560,000
Reservoir #2	No	Reservoir #2 Description	\$0
Reservoir #3	No	Reservoir #3 Description	\$0
Pump Station #1	Yes	Outfall Pump Station	\$1,710,000
Pump Station #2	No	Pump Station #2 Description	\$0
Pump Station #3	No	Pump Station #3 Description	\$0

SUBTOTAL - PROJECT COST **\$30,840,000**

ADDITIONAL PROJECT COSTS:

Demolition	0%		\$0
Overall Sitework	0%		\$0
Plant Computer System	0%		\$0
Yard Electrical	0%		\$0
Yard Piping	0%		\$0
0	0%		\$0
0	0%		\$0
0	0%		\$0

SUBTOTAL with Additional Project Costs **\$30,840,000**

CONTRACTOR MARKUPS:

Overhead	10%		\$3,084,000
Subtotal			\$33,924,000
Profit	5%		\$1,696,200
Subtotal			\$35,620,200
Mob/Bonds/Insurance	5%		\$1,781,010
Subtotal			\$37,401,210
Contingency	25%		\$9,350,303

SUBTOTAL with Markups **\$46,751,513**

ESCALATION (to Mid-Point of Construction):	15.00%		\$7,012,727
SUBTOTAL with Escalation			\$53,764,239

LOCATION ADJUSTMENT FACTOR	100.00%		\$53,764,239
SUBTOTAL - with Local Adjustment Factor			\$53,764,239

Did a CH2M HILL Professional Estimator Review This Cost Estimate? If Yes, by whom?

Yes
Bredehoeft

MAXIMUM CONSTRUCTION COST **\$53,764,239**

NON-CONSTRUCTION COSTS:

Permitting	3%		\$1,612,927
Engineering	10%		\$5,376,424
SDC	8%		\$4,301,139
Commissioning & Startup	1%		\$537,642
Land ROW	5%		\$2,688,212
Legal/Admin	1%		\$537,642
0	1%		\$537,642

SUBTOTAL - Non-Construction Costs **\$15,591,629**

TOTAL - CAPITAL COST **\$69,355,869**

Currency Conversion of TOTAL CAPITAL COST:

Currency	Unit of Measure	Conversion Rate	Converted Amount
None	U.S.Dollar	1	69,355,869

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CH2M HILL Parametric Cost Estimating System (CPES)

CONVEYANCE MODULE

Project Name:	<u>SJRWMD</u>	
Project Number:	<u>341646</u>	To Sketch of Pi
Project Manager:	<u>Mitch Griffin</u>	
Estimator:	<u>Marc Ischen</u>	To Conveyance
Project Description:	<u>Ocean Outfall Study</u>	
Project Location (City):	<u>Satellite Beach - 20" Pipeline</u>	
Project Location (State):	<u>Florida</u>	Click for CPE:
Project Location (Country):	<u>USA</u>	
Construction Start Date:	<u>Jan-07</u>	
Construction Duration (months):	<u>12</u>	
Mid-Point of Construction:	<u>Jul-07</u>	Roundup to the nearest:

Item	Is this Item Included in the Project? (Yes or No)	DESCRIPTION	Cost
Pipe Segment 1	Yes	Onshore Segment	\$4,120,000
Pipe Segment 2	Yes	Offshore Segment	\$9,680,000
Pipe Segment 3	Yes	Manifold	\$50,000
Pipe Segment 4	Yes	Subaqueous Waterway Crossing	\$8,550,000
Pipe Segment 5	No	Segment 5 Description	\$0
Pipe Segment 6	No	Segment 6 Description	\$0
Pipe Segment 7	No	Segment 7 Description	\$0
Pipe Segment 8	No	Segment 8 Description	\$0
Pipe Segment 9	No	Segment 9 Description	\$0
Trenchless Technology	No	Trenchless Technology	\$0
Reservoir #1	Yes	6 Hour Storage Tank	\$360,000
Reservoir #2	No	Reservoir #2 Description	\$0
Reservoir #3	No	Reservoir #3 Description	\$0
Pump Station #1	Yes	Outfall Pump Station	\$1,100,000
Pump Station #2	No	Pump Station #2 Description	\$0
Pump Station #3	No	Pump Station #3 Description	\$0

SUBTOTAL - PROJECT COST \$23,860,000

ADDITIONAL PROJECT COSTS:

Demolition	0%		\$0
Overall Sitework	0%		\$0
Plant Computer System	0%		\$0
Yard Electrical	0%		\$0
Yard Piping	0%		\$0
0	0%		\$0
0	0%		\$0
0	0%		\$0

SUBTOTAL with Additional Project Costs \$23,860,000

CONTRACTOR MARKUPS:

Overhead	10%		\$2,386,000
Subtotal			\$26,246,000
Profit	5%		\$1,312,300
Subtotal			\$27,558,300
Mob/Bonds/Insurance	5%		\$1,377,915
Subtotal			\$28,936,215
Contingency	25%		\$7,234,054

SUBTOTAL with Markups \$36,170,269

ESCALATION (to Mid-Point of Construction): 15.00% \$36,170,269 \$5,425,540

SUBTOTAL with Escalation \$41,595,809

LOCATION ADJUSTMENT FACTOR 100.00% \$41,595,809 \$41,595,809

SUBTOTAL - with Local Adjustment Factor \$41,595,809

Did a CH2M HILL Professional Estimator Review This Cost Estimate? If Yes, by whom?

Yes
Bredehoeft

MAXIMUM CONSTRUCTION COST \$41,595,809

NON-CONSTRUCTION COSTS:

Permitting	3%		\$1,247,874
Engineering	10%		\$4,159,581
SDC	8%		\$3,327,665
Commissioning & Startup	1%		\$415,958
Land ROW	5%		\$2,079,790
Legal/Admin	1%		\$415,958
0	1%		\$415,958

SUBTOTAL - Non-Construction Costs \$12,062,785

TOTAL - CAPITAL COST \$53,658,594

Currency Conversion of TOTAL CAPITAL COST:

Currency	Unit of Measure	Conversion Rate	Converted Amount
None	U.S.Dollar	1	53,658,594

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CH2M HILL Parametric Cost Estimating System (CPES)

CONVEYANCE MODULE

Project Name:	<u>SJRWMD</u>	
Project Number:	<u>341646</u>	To Sketch of Pi
Project Manager:	<u>Mitch Griffin</u>	
Estimator:	<u>Marc Ischen</u>	To Conveyance
Project Description:	<u>Ocean Outfall Study</u>	
Project Location (City):	<u>Satellite Beach - 42" Pipeline</u>	
Project Location (State):	<u>Florida</u>	Click for CPE:
Project Location (Country):	<u>USA</u>	
Construction Start Date:	<u>Jan-07</u>	
Construction Duration (months):	<u>12</u>	
Mid-Point of Construction:	<u>Jul-07</u>	Roundup to the nearest:

Item	Is this Item Included in the Project? (Yes or No)	DESCRIPTION	Cost
Pipe Segment 1	Yes	Onshore Segment	\$7,190,000
Pipe Segment 2	Yes	Offshore Segment	\$12,930,000
Pipe Segment 3	Yes	Manifold	\$190,000
Pipe Segment 4	Yes	Subaqueous Waterway Crossing	\$11,900,000
Pipe Segment 5	No	Segment 5 Description	\$0
Pipe Segment 6	No	Segment 6 Description	\$0
Pipe Segment 7	No	Segment 7 Description	\$0
Pipe Segment 8	No	Segment 8 Description	\$0
Pipe Segment 9	No	Segment 9 Description	\$0
Trenchless Technology	No	Trenchless Technology	\$0
Reservoir #1	Yes	6 Hour Storage Tank	\$1,560,000
Reservoir #2	No	Reservoir #2 Description	\$0
Reservoir #3	No	Reservoir #3 Description	\$0
Pump Station #1	Yes	Outfall Pump Station	\$2,110,000
Pump Station #2	No	Pump Station #2 Description	\$0
Pump Station #3	No	Pump Station #3 Description	\$0

SUBTOTAL - PROJECT COST **\$35,880,000**

ADDITIONAL PROJECT COSTS:

Demolition	0%		\$0
Overall Sitework	0%		\$0
Plant Computer System	0%		\$0
Yard Electrical	0%		\$0
Yard Piping	0%		\$0
0	0%		\$0
0	0%		\$0
0	0%		\$0

SUBTOTAL with Additional Project Costs **\$35,880,000**

CONTRACTOR MARKUPS:

Overhead	10%		\$3,588,000
Subtotal			\$39,468,000
Profit	5%		\$1,973,400
Subtotal			\$41,441,400
Mob/Bonds/Insurance	5%		\$2,072,070
Subtotal			\$43,513,470
Contingency	25%		\$10,878,368

SUBTOTAL with Markups **\$54,391,838**

ESCALATION (to Mid-Point of Construction):	15.00%		\$8,158,776
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SUBTOTAL with Escalation **\$62,550,613**

LOCATION ADJUSTMENT FACTOR	100.00%		\$62,550,613
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SUBTOTAL - with Local Adjustment Factor **\$62,550,613**

Did a CH2M HILL Professional Estimator Review This Cost Estimate? If Yes, by whom?	No (None)	
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MAXIMUM CONSTRUCTION COST **\$87,570,858**

NON-CONSTRUCTION COSTS:

Permitting	3%		\$1,876,518
Engineering	10%		\$6,255,061
SDC	8%		\$5,004,049
Commissioning & Startup	1%		\$625,506
Land ROW	5%		\$3,127,531
Legal/Admin	1%		\$625,506
0	1%		\$625,506

SUBTOTAL - Non-Construction Costs **\$18,139,678**

TOTAL - CAPITAL COST **\$105,710,536**

Currency Conversion of TOTAL CAPITAL COST:

Currency	Unit of Measure	Conversion Rate	Converted Amount
None	U.S.Dollar	1	105,710,536

Note: Unless otherwise stated, this order of magnitude cost opinion does not include any costs associated with the potential discovery of hazardous materials. The cost opinion shown has been prepared for guidance in project evaluation from the information available at the time of preparation. The final costs of the project will depend on actual labor and material costs, actual site conditions, productivity, competitive market conditions, final project scope, final project schedule and other variable factors. As a result, the final project costs will vary from the cost presented above. Because of these factors, funding needs must be carefully reviewed prior to making specific financial decisions or establishing final budgets.

CH2M HILL Parametric Cost Estimating System (CPES)

CONVEYANCE MODULE

Project Name:	<u>SJRWMD</u>	
Project Number:	<u>341646</u>	To Sketch of Pi
Project Manager:	<u>Mitch Griffin</u>	
Estimator:	<u>Marc Ischen</u>	To Conveyance
Project Description:	<u>Ocean Outfall Study</u>	
Project Location (City):	<u>Vero Beach - 20" Pipeline</u>	
Project Location (State):	<u>Florida</u>	Click for CPE:
Project Location (Country):	<u>USA</u>	
Construction Start Date:	<u>Jan-07</u>	
Construction Duration (months):	<u>12</u>	
Mid-Point of Construction:	<u>Jul-07</u>	Roundup to the nearest:

Item	Is this Item Included in the Project? (Yes or No)	DESCRIPTION	Cost
Pipe Segment 1	Yes	Onshore Segment	\$4,290,000
Pipe Segment 2	Yes	Offshore Segment	\$19,330,000
Pipe Segment 3	Yes	Manifold	\$50,000
Pipe Segment 4	Yes	Subaqueous Waterway Crossing	\$2,620,000
Pipe Segment 5	No	Segment 5 Description	\$0
Pipe Segment 6	No	Segment 6 Description	\$0
Pipe Segment 7	No	Segment 7 Description	\$0
Pipe Segment 8	No	Segment 8 Description	\$0
Pipe Segment 9	No	Segment 9 Description	\$0
Trenchless Technology	No	Trenchless Technology	\$0
Reservoir #1	Yes	6 Hour Storage Tank	\$360,000
Reservoir #2	No	Reservoir #2 Description	\$0
Reservoir #3	No	Reservoir #3 Description	\$0
Pump Station #1	Yes	Outfall Pump Station	\$1,280,000
Pump Station #2	No	Pump Station #2 Description	\$0
Pump Station #3	No	Pump Station #3 Description	\$0

SUBTOTAL - PROJECT COST \$27,930,000

ADDITIONAL PROJECT COSTS:

Demolition	0%		\$0
Overall Sitework	0%		\$0
Plant Computer System	0%		\$0
Yard Electrical	0%		\$0
Yard Piping	0%		\$0
0	0%		\$0
0	0%		\$0
0	0%		\$0

SUBTOTAL with Additional Project Costs \$27,930,000

CONTRACTOR MARKUPS:

Overhead	10%		\$27,930,000		\$2,793,000
Subtotal					\$30,723,000
Profit	5%		\$30,723,000		\$1,536,150
Subtotal					\$32,259,150
Mob/Bonds/Insurance	5%		\$32,259,150		\$1,612,958
Subtotal					\$33,872,108
Contingency	25%		\$33,872,108		\$8,468,027

SUBTOTAL with Markups \$42,340,134

ESCALATION (to Mid-Point of Construction):	15.00%		\$42,340,134	\$6,351,020
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SUBTOTAL with Escalation \$48,691,155

LOCATION ADJUSTMENT FACTOR	100.00%		\$48,691,155	\$48,691,155
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SUBTOTAL - with Local Adjustment Factor \$48,691,155

Did a CH2M HILL Professional Estimator Review This Cost Estimate? If Yes, by whom?	Yes	
	Bredehoeft	

MAXIMUM CONSTRUCTION COST \$48,691,155

NON-CONSTRUCTION COSTS:

Permitting	3%		\$48,691,155	\$1,460,735
Engineering	10%		\$48,691,155	\$4,869,115
SDC	8%		\$48,691,155	\$3,895,292
Commissioning & Startup	1%		\$48,691,155	\$486,912
Land ROW	5%		\$48,691,155	\$2,434,558
Legal/Admin	1%		\$48,691,155	\$486,912
0	1%		\$48,691,155	\$486,912

SUBTOTAL - Non-Construction Costs \$14,120,435

TOTAL - CAPITAL COST \$62,811,589

Currency Conversion of TOTAL CAPITAL COST:

Currency	Unit of Measure	Conversion Rate	Converted Amount
None	U.S.Dollar	1	62,811,589

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CH2M HILL Parametric Cost Estimating System (CPES)

CONVEYANCE MODULE

Project Name:	<u>SJRWMD</u>	
Project Number:	<u>341646</u>	To Sketch of Pi
Project Manager:	<u>Mitch Griffin</u>	
Estimator:	<u>Marc Ischen</u>	To Conveyance
Project Description:	<u>Ocean Outfall Study</u>	
Project Location (City):	<u>Vero Beach - 42" Pipeline</u>	
Project Location (State):	<u>Florida</u>	Click for CPE:
Project Location (Country):	<u>USA</u>	
Construction Start Date:	<u>Jan-07</u>	
Construction Duration (months):	<u>12</u>	
Mid-Point of Construction:	<u>Jul-07</u>	Roundup to the nearest:

Item	Is this Item Included in the Project? (Yes or No)	DESCRIPTION	Cost
Pipe Segment 1	Yes	Onshore Segment	\$7,460,000
Pipe Segment 2	Yes	Offshore Segment	\$25,820,000
Pipe Segment 3	Yes	Manifold	\$190,000
Pipe Segment 4	Yes	Subaqueous Waterway Crossing	\$3,650,000
Pipe Segment 5	No	Segment 5 Description	\$0
Pipe Segment 6	No	Segment 6 Description	\$0
Pipe Segment 7	No	Segment 7 Description	\$0
Pipe Segment 8	No	Segment 8 Description	\$0
Pipe Segment 9	No	Segment 9 Description	\$0
Trenchless Technology	No	Trenchless Technology	\$0
Reservoir #1	Yes	6 Hour Storage Tank	\$1,560,000
Reservoir #2	No	Reservoir #2 Description	\$0
Reservoir #3	No	Reservoir #3 Description	\$0
Pump Station #1	Yes	Outfall Pump Station	\$2,230,000
Pump Station #2	No	Pump Station #2 Description	\$0
Pump Station #3	No	Pump Station #3 Description	\$0

SUBTOTAL - PROJECT COST \$40,910,000

ADDITIONAL PROJECT COSTS:

Demolition	0%		\$0
Overall Sitework	0%		\$0
Plant Computer System	0%		\$0
Yard Electrical	0%		\$0
Yard Piping	0%		\$0
0	0%		\$0
0	0%		\$0
0	0%		\$0

SUBTOTAL with Additional Project Costs \$40,910,000

CONTRACTOR MARKUPS:

Overhead	10%		\$4,091,000
Subtotal			\$45,001,000
Profit	5%		\$2,250,050
Subtotal			\$47,251,050
Mob/Bonds/Insurance	5%		\$2,362,553
Subtotal			\$49,613,603
Contingency	25%		\$12,403,401

SUBTOTAL with Markups \$62,017,003

ESCALATION (to Mid-Point of Construction):	15.00%		\$9,302,550
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SUBTOTAL with Escalation \$71,319,554

LOCATION ADJUSTMENT FACTOR	100.00%		\$71,319,554
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SUBTOTAL - with Local Adjustment Factor \$71,319,554

Did a CH2M HILL Professional Estimator Review This Cost Estimate? If Yes, by whom?	Yes	
	Bredehoeft	

MAXIMUM CONSTRUCTION COST \$71,319,554

NON-CONSTRUCTION COSTS:

Permitting	3%		\$2,139,587
Engineering	10%		\$7,131,955
SDC	8%		\$5,705,564
Commissioning & Startup	1%		\$713,196
Land ROW	5%		\$3,565,978
Legal/Admin	1%		\$713,196
0	1%		\$713,196

SUBTOTAL - Non-Construction Costs \$20,682,671

TOTAL - CAPITAL COST \$92,002,224

Currency Conversion of TOTAL CAPITAL COST:

Currency	Unit of Measure	Conversion Rate	Converted Amount
None	U.S.Dollar	1	92,002,224

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