

Table D1. Test Results for the SPP *Menidia* Test

Treatment	SPP (%)	Rep	# Surviving	# Dead	Percentage Survival	Mean Percentage Survival	SD
Control	0	1	10	0	100	100.0	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Site Water	0	1	10	0	100	98.0	4.5
		2	10	0	100		
		3	9	1	90		
		4	10	0	100		
		5	10	0	100		
Area 1 comp	10	1	10	0	100	100.0	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Area 1 comp	50	1	10	0	100	100.0	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Area 1 comp	100	1	10	0	100	100.0	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		

Treatment	SPP (%)	Rep	# Surviving	# Dead	Percentage Survival	Mean Percentage Survival	SD
Area 2 comp	10	1	10	0	100	100.0	0.0
		2	10	0	100		
		3	11	0	100		
		4	10	0	100		
		5	10	0	100		
Area 2 comp	50	1	10	0	100	98.0	4.5
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	9	1	90		
Area 2 comp	100	1	10	0	100	100.0	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Area 4a comp	10	1	10	0	100	98.0	4.5
		2	10	0	100		
		3	9	1	90		
		4	10	0	100		
		5	10	0	100		
Area 4a comp	50	1	10	0	100	100.0	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Area 4a comp	100	1	10	0	100	100.0	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		

Treatment	SPP (%)	Rep	# Surviving	# Dead	Percentage Survival	Mean Percentage Survival	SD
Area 4b comp	10	1	10	0	100	98.0	4.5
		2	10	0	100		
		3	10	0	100		
		4	9	1	90		
		5	10	0	100		
Area 4b comp	50	1	10	0	100	96.0	5.5
		2	9	1	90		
		3	9	1	90		
		4	10	0	100		
		5	10	0	100		
Area 4b comp	100	1	10	0	100	98.0	4.5
		2	10	0	100		
		3	10	0	100		
		4	9	1	90		
		5	10	0	100		
Lower Comp	10	1	10	0	100	100.0	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Lower Comp	50	1	10	0	100	100.0	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Lower Comp	100	1	10	0	100	100.0	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		

Table D2. Water Quality Summary for the 10-Day Acute test with *Menidia beryllina*

Treatment	Conc. (%)	Dissolved Oxygen (mg/L)			Temperature (°C)			Salinity (ppt)			pH (units)		
		Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Control		6.8	6.1	7.3	19.7	18.9	20.3	26.0	25.0	27.0	7.8	7.4	7.9
Site Water		6.5	5.8	7.1	19.6	19.2	20.3	25.1	24.0	26.0	7.8	7.3	8.0
Area 1 comp	10	6.5	6.0	6.7	19.8	19.3	20.6	26.0	25.0	27.0	7.9	7.5	8.0
	50	6.6	6.1	6.9	19.7	19.2	20.8	26.0	25.0	27.0	7.9	7.6	8.1
	100	6.3	5.5	6.7	19.6	19.1	20.2	25.1	24.2	26.0	7.9	7.6	8.1
Area 2 comp	10	6.7	6.3	7.1	19.8	19.4	21.1	25.9	25.0	27.0	7.9	7.6	8.1
	50	6.5	6.1	6.8	19.8	19.5	20.8	25.7	25.0	26.0	8.0	7.7	8.1
	100	6.2	5.2	6.6	19.8	19.3	21.3	25.0	24.0	26.0	8.0	7.7	8.2
Area 4a comp	10	6.5	6.1	6.9	19.8	19.1	21.0	26.2	25.0	27.0	7.9	7.7	8.1
	50	6.5	6.2	6.7	19.7	19.4	20.8	25.9	25.0	27.0	8.0	7.7	8.1
	100	6.4	6.0	6.8	19.6	19.2	20.3	25.7	25.0	27.0	8.1	7.8	8.2
Area 4b comp	10	6.4	6.2	6.7	19.7	19.2	20.3	26.0	25.0	27.0	7.9	7.6	8.0
	50	6.2	5.8	6.6	19.7	19.3	20.5	25.7	25.0	26.0	8.1	7.7	8.2
	100	6.0	4.7	6.4	19.6	19.3	20.5	25.7	25.0	26.0	8.2	7.8	8.3
Lower Comp	10	6.3	5.8	6.9	19.6	19.2	20.5	25.7	25.0	26.0	7.9	7.7	8.1
	50	6.4	6.0	6.8	19.6	19.2	21.1	25.4	25.0	26.0	7.9	7.7	8.0
	100	6.5	6.2	6.7	19.6	19.1	20.8	25.1	24.0	26.0	7.9	7.6	8.1

96 HOUR SUSPENDED PARTICULATE PHASE TEST DATA SHEET 3



SPECIES
Menidia beryllina

CLIENT PND Engineers	PROJECT Douglas Harbor	NEWFIELDS JOB NO. 1414-001-860
		PROJECT MANAGER Brian Hester

SURVIVAL & BEHAVIOR DATA

OBSERVATIONS KEY N = normal DC = discoloration OS = on bottom J = jumper Q = quiescent SUR = surfacing	CLIENT/NEWFIELDS ID	CONC.		INITIAL		Day 1		Day 2		Day 3		Day 4						
		value	units	REP	NUMBER	DATE	TECHNICIAN	#ALIVE	#DEAD	OBS	DATE	TECHNICIAN	#ALIVE	#DEAD	OBS			
	Control / .	0 %		1	10	12/17/08	MMB	10	0	12/19/08	SH	10	0	12/20/08	MMB	10	0	N
	Site Water /	0 %		2	10			10	0			10	0			10	0	N
	Area 1 comp / .	10 %		3	10			10	0			10	0			10	0	N
	Area 1 comp / .	50 %		4	10			10	0			10	0			10	0	N
	Area 1 comp / .	100 %		5	10			10	0			10	0			10	0	N

96 HOUR SUSPENDED PARTICULATE PHASE TEST DATA SHEET 3



SPECIES
Menidia beryllina

CLIENT PND Engineers	PROJECT Douglas Harbor	PROJECT MANAGER Brian Hester
NEWFIELDS JOB NO. 1414-001-860		

SURVIVAL & BEHAVIOR DATA

OBSERVATIONS KEY N = normal IOE = loss of equilibrium Q = quiescent SUR = surfacing	CLIENT/NEWFIELDS ID	CONC. value	Day 1					Day 2					Day 3					Day 4													
			#ALIVE		#DEAD		OBS		#ALIVE		#DEAD		OBS		#ALIVE		#DEAD		OBS		#ALIVE		#DEAD		OBS						
			UNITS	INITIAL NUMBER	UNITS	INITIAL NUMBER	UNITS	INITIAL NUMBER	UNITS	INITIAL NUMBER	UNITS	INITIAL NUMBER	UNITS	INITIAL NUMBER	UNITS	INITIAL NUMBER	UNITS	INITIAL NUMBER	UNITS	INITIAL NUMBER	UNITS	INITIAL NUMBER	UNITS	INITIAL NUMBER	UNITS	INITIAL NUMBER	UNITS	INITIAL NUMBER			
Area 2 comp / .		10 %	1	10	0	0	2	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N			
			2	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N
			3	11	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N
			4	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N
			5	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N
Area 2 comp / .		50 %	1	10	0	0	2	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N			
			2	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			3	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			4	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			5	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
Area 2 comp / .		100 %	1	10	0	0	2	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N			
			2	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			3	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			4	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			5	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
Area 4a comp / .		10 %	1	10	0	0	2	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N			
			2	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			3	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			4	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			5	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
Area 4a comp / .		50 %	1	10	0	0	2	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N			
			2	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			3	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			4	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			5	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
Area 4a comp / .		100 %	1	10	0	0	2	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N			
			2	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			3	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			4	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				
			5	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N	10	0	0	N				

DWC CR 12/18/08

96 HOUR SUSPENDED PARTICULATE PHASE TEST DATA SHEET 3



SPECIES Menidia beryllina	NEWFIELDS JOB NO. 1414-001-860	PROJECT Douglas Harbor	PROJECT MANAGER Brian Hester
CLIENT PND Engineers	SURVIVAL & BEHAVIOR DATA		

OBSERVATIONS KEY N = normal DC = discoloration LB = loss of equilibrium Q = quiescent SUR = surfacing	CONC. value	units	REP	INITIAL NUMBER	Day 1			Day 2			Day 3			Day 4												
					DATE	TECHNICIAN	OBS	DATE	TECHNICIAN	OBS	DATE	TECHNICIAN	OBS	DATE	TECHNICIAN	OBS										
					#ALIVE	#DEAD	#OBS	#ALIVE	#DEAD	#OBS	#ALIVE	#DEAD	#OBS	#ALIVE	#DEAD	#OBS										
Area 4b comp / .	10 %		1	10	12/17/08	MMP	N	10	0	12/18/08	GR	N	10	0	12/19/08	BH	N	10	0	12/20/08	MMP	N	10	0		
			2	10			N	10	0			N	10	0			N	10	0			N	10	0		
			3	10			N	10	0			N	10	0			N	10	0			N	10	0		
			4	10			N	10	0			N	10	0			N	10	0			N	10	0		
			5	10			N	10	0			N	10	0			N	10	0			N	10	0		
Area 4b comp / .	50 %		1	10	12/17/08	MMP	N	10	0	12/18/08	GR	N	10	0	12/19/08	BH	N	10	0	12/20/08	MMP	N	10	0		
			2	10			N	10	0			N	10	0			N	10	0			N	10	0		
			3	10			N	10	0			N	10	0			N	10	0			N	10	0		
			4	10			N	10	0			N	10	0			N	10	0			N	10	0		
			5	10			N	10	0			N	10	0			N	10	0			N	10	0		
Area 4b comp / .	100 %		1	10	12/17/08	MMP	N	10	0	12/18/08	GR	N	10	0	12/19/08	BH	N	10	0	12/20/08	MMP	N	10	0		
			2	10			N	10	0			N	10	0			N	10	0			N	10	0		
			3	10			N	10	0			N	10	0			N	10	0			N	10	0		
			4	10			N	10	0			N	10	0			N	10	0			N	10	0		
			5	10			N	10	0			N	10	0			N	10	0			N	10	0		
Lower Comp / .	10 %		1	10	12/17/08	MMP	N	10	0	12/18/08	GR	N	10	0	12/19/08	BH	N	10	0	12/20/08	MMP	N	10	0		
			2	10			N	10	0			N	10	0			N	10	0			N	10	0		
			3	10			N	10	0			N	10	0			N	10	0			N	10	0		
			4	10			N	10	0			N	10	0			N	10	0			N	10	0		
			5	10			N	10	0			N	10	0			N	10	0			N	10	0		
Lower Comp / .	50 %		1	10	12/17/08	MMP	N	10	0	12/18/08	GR	N	10	0	12/19/08	BH	N	10	0	12/20/08	MMP	N	10	0		
			2	10			N	10	0			N	10	0			N	10	0			N	10	0		
			3	10			N	10	0			N	10	0			N	10	0			N	10	0		
			4	10			N	10	0			N	10	0			N	10	0			N	10	0		
			5	10			N	10	0			N	10	0			N	10	0			N	10	0		
Lower Comp / .	100 %		1	10	12/17/08	MMP	N	10	0	12/18/08	GR	N	10	0	12/19/08	BH	N	10	0	12/20/08	MMP	N	10	0		
			2	10			N	10	0			N	10	0			N	10	0			N	10	0		
			3	10			N	10	0			N	10	0			N	10	0			N	10	0		
			4	10			N	10	0			N	10	0			N	10	0			N	10	0		
			5	10			N	10	0			N	10	0			N	10	0			N	10	0		

96 HOUR SUSPENDED PARTICULATE
PHASE TEST
WATER QUALITY DATASHEET

CLIENT	PND Engineers	PROJECT	Douglas Harbor	SPECIES	<i>Menidia beryllina</i>	DILUTION WATER BATCH	FSW121608	TEST START DATE	16Dec08	TIME	1735
NEWFIELDS JOB NUMBER	1414-001-860	PROJECT MANAGER	Brian Hester	NEWFIELDS LABORATORY	Port Gamble Bath	PROTOCOL	USEPAUSCOE 1998 / NEWFIELDS BIO067	TEST END DATE	20Dec08	TIME	1540

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	TEST CONDITIONS		CONCENTRATION value	units	DAY	REP	DO (mg/L)		TEMP. (C)		SALINITY (ppt)		pH		Date	Tech	FEEDING
	meter	> 3.7					meter	°C	meter	ppt	meter	unit					
Control / .	0 %		0		All	3	6.8	3	20.3	3	25	3	7.7	12/16/08	BH		
Control / .	0 %		1		1	3	6.5	3	20.1	3	26	3	7.4	12/17/08	✓		
Control / .	0 %		2		2	3	6.1	3	19.7	3	26	3	7.6	12/18/08	✓	BH	
Control / .	0 %		3		3	3	6.5	3	18.9	3	26	3	7.8	12/19	CR		
Control / .	0 %		4		1	3	7.3	3	19.5	3	27	3	7.8	12/20	BH		
					2	3	7.0	3	19.6	3	26	3	7.9				
					3	3	6.6	3	19.6	3	26	3	7.9				
					4	3	6.9	3	19.6	3	26	3	7.9				
					5	3	7.2	3	19.6	3	26	3	7.9				
Site Water / .	0 %		0		All	3	6.8	3	19.5	3	24	3	7.3	12/16/08	BH		
Site Water / .	0 %		1		1	3	6.6	3	20.3	3	25	3	7.5	12/17/08	✓		
Site Water / .	0 %		2		2	3	6.2	3	19.6	3	25	3	7.6	12/18/08	✓	BH	
Site Water / .	0 %		3		3	3	6.0	3	19.7	3	25	3	7.9	12/19	CR		
Site Water / .	0 %		4		1	3	6.9	3	19.6	3	26	3	7.9	12/20	BH		
					2	3	7.1	3	19.6	3	25	3	7.9				
					3	3	6.8	3	19.6	3	25	3	7.9				
					4	3	6.7	3	19.6	3	26	3	8.0				
					5	3	5.8	3	19.6	3	25	3	8.0				

96 HOUR SUSPENDED PARTICULATE
PHASE TEST
WATER QUALITY DATASHEET

CLIENT PND Engineers NEWFIELDS JOB NUMBER 1414-001-860	PROJECT Douglas Harbor PROJECT MANAGER Brian Hester	SPECIES <i>Menidia beryllina</i> NEWFIELDS LABORATORY Port Gamble Bath	DILUTION WATER BATCH FSW121608 PROTOCOL USEPAUSCOE 1998 / NEWFIELDS BIO067	TEST START DATE 16Dec08 TEST END DATE 20Dec08	TIME
---	--	---	---	--	------

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	CONCENTRATION value units	DAY	REP	DO (mg/L)		TEMP. (C)		SALINITY (ppt)		pH		Date	Tech	FEEDING
				meter	mg/L	meter	°C	meter	ppt	meter	unit			
Area 1 comp / .	10 %	0	All	3	6.7	3	20.2	3	25	3	7.7	12/16/08	BH	
Area 1 comp / .	10 %	1	1	3	6.4	3	20.6	3	26	3	7.5	12/17/08	✓	
Area 1 comp / .	10 %	2	2	3	6.3	3	19.7	3	26	3	7.7	12/18/08	✓	BH
Area 1 comp / .	10 %	3	3	3	6.4	3	19.3	3	26	3	8.0	12/19	CR	
Area 1 comp / .	10 %	4	1	3	6.5	3	19.6	3	26	3	7.9	12/20	BH	
				2	6.7	3	19.6	3	27	3	7.9			
				3	6.7	3	19.6	3	26	3	8.0			
				4	6.6	3	19.6	3	26	3	8.0			
				5	6.0	3	19.6	3	26	3	8.0			
Area 1 comp / .	50 %	0	All	3	6.5	3	19.8	3	25	3	7.6	12/14/08	BH	
Area 1 comp / .	50 %	1	1	3	6.1	3	20.8	3	25	3	7.6	12/17/08	✓	
Area 1 comp / .	50 %	2	2	3	6.3	3	19.5	3	26	3	7.7	12/18/08	✓	BH
Area 1 comp / .	50 %	3	3	3	6.5	3	19.2	3	26	3	7.9	12/19	CR	
Area 1 comp / .	50 %	4	1	3	6.8	3	19.6	3	26	3	8.0	12/20	BH	
				2	6.9	3	19.6	3	26	3	8.0			
				3	6.7	3	19.6	3	27	3	8.0			
				4	6.8	3	19.6	3	27	3	8.0			
				5	6.8	3	19.6	3	26	3	8.1			
Area 1 comp / .	100 %	0	All	3	6.2	3	19.1	3	24.2	3	7.7	12/16/08	BH	
Area 1 comp / .	100 %	1	1	3	5.5	3	20.2	3	25	3	7.6	12/17/08	✓	
Area 1 comp / .	100 %	2	2	3	6.3	3	19.7	3	25	3	7.8	12/18/08	✓	BH
Area 1 comp / .	100 %	3	3	3	6.0	3	19.3	3	25	3	8.0	12/19	CR	
Area 1 comp / .	100 %	4	1	3	6.7	3	19.7	3	26	3	8.1	12/20	BH	
				2	6.4	3	19.7	3	25	3	8.1			
				3	6.3	3	19.7	3	25	3	8.1			
				4	6.3	3	19.6	3	25	3	8.1			
				5	6.7	3	19.6	3	26	3	8.1			

96 HOUR SUSPENDED PARTICULATE
PHASE TEST
WATER QUALITY DATASHEET

CLIENT	PND Engineers	PROJECT	Douglas Harbor	SPECIES	<i>Menidia beryllina</i>	DILUTION WATER BATCH	FSW121608	TEST START DATE	16Dec08	TIME
NEWFIELDS JOB NUMBER	1414-001-860	PROJECT MANAGER	Brian Hester	NEWFIELDS LABORATORY	Port Gamble Bath	PROTOCOL	USEPAUSCOE 1998 / NEWFIELDS BIO067	TEST END DATE	20Dec08	TIME

WATER QUALITY DATA

CLIENT/ NEWFIELDS ID	CONCENTRATION value units	DAY	REP	DO (mg/L)		TEMP. °C		SALINITY (ppt)		pH		Date	Tech	FEEDING
				meter	D.O.	meter	TEMP.	meter	ppt	meter	unit			
Area 2 comp / .	10 %	0	All	3	6.7	3	20.2	3	25	3	7.7	12/16/08	BH	
Area 2 comp / .	10 %	1	1	3	6.4	3	21.1	3	25	3	7.6	12/17/08	J	
Area 2 comp / .	10 %	2	2	3	6.3	3	19.5	3	24	3	7.8	12/18/08	J	BH
Area 2 comp / .	10 %	3	3	3	6.3	3	19.4	3	26	3	8.1	12/19	CR	
Area 2 comp / .	10 %	4	1	3	6.8	3	19.7	3	26	3	8.1	12/20	BH	
				2	6.8	3	19.7	3	26	3	8.0			
				3	6.7	3	19.7	3	26	3	8.0			
				4	6.9	3	19.7	3	27	3	8.0			
				5	7.1	3	19.6	3	26	3	8.0			
Area 2 comp / .	50 %	0	All	3	6.1	3	19.9	3	25	3	7.8	12/16/08	BH	
Area 2 comp / .	50 %	1	1	3	6.3	3	20.8	3	25	3	7.7	12/17/08	J	
Area 2 comp / .	50 %	2	2	3	6.3	3	19.6	3	25	3	7.8	12/18/08	J	BH
Area 2 comp / .	50 %	3	3	3	6.6	3	19.5	3	26	3	8.1	12/19	CR	
Area 2 comp / .	50 %	4	1	3	6.7	3	19.7	3	26	3	8.0	12/20	BH	
				2	6.8	3	19.6	3	26	3	8.0			
				3	6.3	3	19.7	3	26	3	8.1			
				4	6.5	3	19.7	3	26	3	8.1			
				5	6.6	3	19.6	3	26	3	8.1			
Area 2 comp / .	100 %	0	All	3	5.2	3	19.3	3	24	3	7.7	12/16/08	BH	
Area 2 comp / .	100 %	1	1	3	5.5	3	21.3	3	25	3	7.8	12/17/08	J	
Area 2 comp / .	100 %	2	2	3	6.1	3	19.6	3	25	3	7.9	12/18/08	J	BH
Area 2 comp / .	100 %	3	3	3	6.4	3	19.5	3	25	3	8.1	12/19	CR	
Area 2 comp / .	100 %	4	1	3	6.4	3	19.7	3	25	3	8.1	12/20	BH	
				2	6.6	3	19.7	3	25	3	8.2			
				3	6.6	3	19.7	3	26	3	8.2			
				4	6.6	3	19.6	3	25	3	8.2			
				5	6.5	3	19.6	3	25	3	8.2			

**96 HOUR SUSPENDED PARTICULATE
PHASE TEST
WATER QUALITY DATASHEET**

CLIENT PND Engineers NEWFIELDS JOB NUMBER 1414-001-860	PROJECT Douglas Harbor PROJECT MANAGER Brian Hester	SPECIES Menidia beryllina NEWFIELDS LABORATORY Port Gamble Bath	DILUTION WATER BATCH FSW121608	TEST START DATE 16Dec08	TIME
		PROTOCOL USEPAUSCOE 1998 / NEWFIELDS BIO067		TEST END DATE 20Dec08	TIME

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	TEST CONDITIONS	CONCENTRATION value	units	DAY	REP	DO (mg/L)		TEMP. °C		SALINITY (ppt)		pH		Date	Tech	FEEDING
						meter	D.O.	meter	TEMP.	meter	ppt	meter	unit			
Area 4a comp / .	10 %			0	All	3	6.7	3	20.2	3	25	3	7.8	12/16/08	BH	
						3	6.4	3	21.0	3	26	3	7.7	12/17/08	L	
						3	6.3	3	19.6	3	26	3	7.8	12/18/08	L	BH
						3	6.5	3	19.1	3	26	3	8.0	12/19	CR	
Area 4a comp / .	10 %		4			3	6.3	3	19.6	3	26	3	8.1	12/20	BH	
						3	6.4	3	19.6	3	27	3	8.1			
						3	6.7	3	19.6	3	26	3	8.0			
						3	6.1	3	19.6	3	27	3	8.0			
						3	6.9	3	19.6	3	27	3	8.0			
Area 4a comp / .	50 %		0	All		3	6.6	3	19.9	3	25	3	7.8	12/16/08	BH	
						3	6.5	3	20.8	3	25	3	7.7	12/17/08	L	
						3	6.5	3	19.4	3	26	3	7.8	12/18/08	L	BH
						3	6.2	3	19.4	3	26	3	8.0	12/19	CR	
						3	6.7	3	19.6	3	26	3	8.0	12/20	BH	
Area 4a comp / .	50 %		4			3	6.7	3	19.7	3	27	3	8.1			
						3	6.6	3	19.6	3	26	3	8.1			
						3	6.5	3	19.6	3	26	3	8.1			
						3	6.5	3	19.6	3	26	3	8.1			
						3	6.5	3	19.6	3	26	3	8.1			
Area 4a comp / .	100 %		0	All		3	6.4	3	19.2	3	25	3	7.8	12/16/08	BH	
						3	6.4	3	20.3	3	25	3	7.8	12/17/08	L	
						3	6.1	3	19.7	3	25	3	8.0	12/18/08	L	BH
						3	6.2	3	19.3	3	25	3	8.1	12/19	CR	
						3	6.8	3	19.7	3	26	3	8.1	12/20	BH	
Area 4a comp / .	100 %		4			3	6.0	3	19.7	3	27	3	8.2			
						3	6.6	3	19.7	3	26	3	8.2			
						3	6.6	3	19.6	3	26	3	8.2			
						3	6.7	3	19.6	3	26	3	8.2			
						3	6.7	3	19.6	3	26	3	8.2			

96 HOUR SUSPENDED PARTICULATE
PHASE TEST
WATER QUALITY DATASHEET

CLIENT	PND Engineers	PROJECT	Douglas Harbor	SPECIES	Menidia beryllina	DILUTION WATER BATCH	FSW121608	TEST START DATE	16Dec08	TIME
NEWFIELDS JOB NUMBER	1414-001-860	PROJECT MANAGER	Brian Hester	NEWFIELDS LABORATORY	Port Gamble Bath	PROTOCOL	USEPA/USCOE 1998 / NEWFIELDS BIO067	TEST END DATE	20Dec08	TIME

WATER QUALITY DATA

CLIENT/ NEWFIELDS ID	CONCENTRATION value	units	DAY	REP	DO (mg/L)		TEMP. °C		SALINITY (ppt)		pH		Date	Tech	FEEDING
					meter	mg/L	meter	°C	meter	ppt	meter	unit			
Area 4b comp / .	10 %		0	All	3	6.7	3	20.1	3	25	3	7.8	12/16/08	BH	
Area 4b comp / .	10 %		1	1	3	6.5	3	20.3	3	25.0	3	7.8	12/17/08	J	
Area 4b comp / .	10 %		2	2	3	6.4	3	19.3	3	26	3	7.9	12/18/08	J	BH
Area 4b comp / .	10 %		3	3	3	6.2	3	19.2	3	26	3	8.0	12/19	CR	
Area 4b comp / .	10 %		4	1	3	6.3	3	19.7	3	26	3	8.0	12/20	MWB	
				2	3	6.5	3	19.6	3	26	3	8.0			
				3	3	6.3	3	19.6	3	26	3	8.0			
				4	3	6.2	3	19.6	3	26	3	8.0			
				5	3	6.3	3	19.6	3	27	3	8.0			
Area 4b comp / .	50 %		0	All	3	6.3	3	19.9	3	25	3	7.8	12/16/08	BH	
Area 4b comp / .	50 %		1	1	3	5.8	3	20.5	3	25	3	7.7	12/17/08	J	
Area 4b comp / .	50 %		2	2	3	6.4	3	19.5	3	25	3	7.9	12/18/08	J	BH
Area 4b comp / .	50 %		3	3	3	6.0	3	19.3	3	26	3	8.1	12/19	CR	
Area 4b comp / .	50 %		4	1	3	6.6	3	19.6	3	26	3	8.2	12/20	MWB	
				2	3	6.3	3	19.6	3	26	3	8.2			
				3	3	6.3	3	19.6	3	26	3	8.2			
				4	3	6.2	3	19.6	3	26	3	8.2			
				5	3	6.3	3	19.6	3	26	3	8.2			
Area 4b comp / .	100 %		0	All	3	5.7	3	19.3	3	25	3	7.9	12/16/08	BH	
Area 4b comp / .	100 %		1	1	3	4.7	3	20.5	3	25	3	7.8	12/17/08	J	
Area 4b comp / .	100 %		2	2	3	6.0	3	19.5	3	25	3	8.0	12/18/08	J	BH
Area 4b comp / .	100 %		3	3	3	5.9	3	19.4	3	26	3	8.2	12/19	CR	
Area 4b comp / .	100 %		4	1	3	6.4	3	19.7	3	26	3	8.3	12/20	MWB	
				2	3	6.2	3	19.6	3	26	3	8.3			
				3	3	6.2	3	19.6	3	26	3	8.3			
				4	3	6.3	3	19.6	3	26	3	8.3			
				5	3	6.2	3	19.6	3	26	3	8.3			

**96 HOUR SUSPENDED PARTICULATE
PHASE TEST
WATER QUALITY DATASHEET**



CLIENT	PROJECT	SPECIES	DILUTION WATER BATCH	TEST START DATE	TIME
PND Engineers	Douglas Harbor	<i>Menidia beryllina</i>	FSW121608	16Dec08	
NEWFIELDS JOB NUMBER	PROJECT MANAGER	NEWFIELDS LABORATORY	PROTOCOL	TEST END DATE	TIME
1414-001-860	Brian Hester	Port Gamble Bath	USEPAUSCOE 1998 / NEWFIELDS B10067	20Dec08	

WATER QUALITY DATA

CLIENT/ NEWFIELDS ID	TEST CONDITIONS	CONCENTRATION value	units	DAY	REP	DO (mg/L)		TEMP. (C)		SALINITY (ppt)		pH		Date	Tech	FEEDING
						meter	mg/L	meter	°C	meter	ppt	meter	unit			
Lower Comp / .	10 %			0	All	3	6.9	3	19.2	3	25	3	7.7	12/16/08	BH	
Lower Comp / .	10 %			1	1	3	5.8	3	20.5	3	25	3	7.8	12/17/08	f	
Lower Comp / .	10 %			2	2	3	6.3	3	19.5	3	25	3	7.8	12/18/08	f	BH
Lower Comp / .	10 %			3	3	3	6.1	3	19.2	3	26	3	8.0	12/19	CR	
Lower Comp / .	10 %			4	1	3	6.3	3	19.6	3	26	3	8.1	12/20	MNBS	
					2	3	6.4	3	19.7	3	26	3	8.0			
					3	3	6.2	3	19.6	3	26	3	8.6			
					4	3	6.3	3	19.6	3	26	3	7.9			
					5	3	6.3	3	19.6	3	26	3	8.0			
Lower Comp / .	50 %			0	All	3	6.8	3	19.2	3	25	3	7.7	12/16/08	BH	
Lower Comp / .	50 %			1	1	3	6.1	3	21.1	3	25	3	7.7	12/17/08	f	
Lower Comp / .	50 %			2	2	3	6.3	3	19.4	3	25	3	7.9	12/18/08	f	BH
Lower Comp / .	50 %			3	3	3	6.6	3	19.2	3	25	3	8.0	12/19	CR	
Lower Comp / .	50 %			4	1	3	6.4	3	19.6	3	26	3	8.6	12/20	MNBS	
					2	3	6.4	3	19.6	3	26	3	8.0			
					3	3	6.6	3	19.6	3	26	3	8.0			
					4	3	6.4	3	19.5	3	26	3	8.0			
					5	3	6.0	3	19.5	3	25	3	8.6			
Lower Comp / .	100 %			0	All	3	6.7	3	19.3	3	24	3	7.7	12/16/08	BH	
Lower Comp / .	100 %			1	1	3	6.2	3	20.8	3	25	3	7.6	12/17/08	f	
Lower Comp / .	100 %			2	2	3	6.2	3	19.6	3	25	3	7.8	12/18/08	f	BH
Lower Comp / .	100 %			3	3	3	6.6	3	19.1	3	25	3	8.0	12/19	CR	
Lower Comp / .	100 %			4	1	3	6.6	3	19.5	3	26	3	8.0	12/20	MNBS	
					2	3	6.5	3	19.6	3	25	3	8.1			
					3	3	6.4	3	19.5	3	25	3	8.1			
					4	3	6.5	3	19.5	3	26	3	8.1			
					5	3	6.4	3	19.6	3	25	3	8.1			



Ammonia Analysis Total Ammonia (mg/L)

Client/Project: PND1 Juneau Douglas Harbor	Organism: Meridia	NewFields Test ID:	Test Duration (days):
---	-----------------------------	---------------------------	------------------------------

PRETEST / INITIAL / **(FINAL)** / OTHER (circle one) DAY of TEST: _____
 OVERLYING (OV) / POREWATER (PW) (circle one)

Calibration Standards Temperature		Sample temperature should be within $\pm 1^{\circ}\text{C}$ of standards temperature at time and date of analysis.
Date:	Temperature:	
22 Dec. '08	19.0	

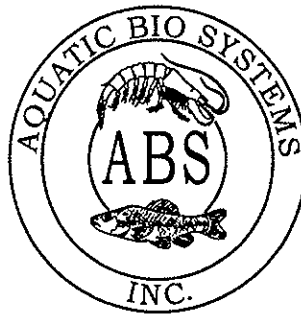
Sample ID or Description	Conc. or Rep	Date of Sampling and Initials	Ammonia Value (mg/L)	Temp $^{\circ}\text{C}$	Date of Reading and Initials	Sample Preserved (Y/N)	pH	Sal (ppt)	Sulf. mg/L
ϕ	Swr.	12/21/08 MMB	12.2	18.5	12/22/08 MMB	Y			
Site Water			12.9						
Area 1 10'			7.69						
50'			10.5						
100'			12.8						
Area 2 10'			4.74						
50'			9.03						
100'			12.3						
Area 4A 10'			3.19						
50'			6.51						
100'			9.96						
Area 4B 10'			4.18						
50'			9.29						
100'			13.1						
LC 10'			1.63						
50'			2.32						
100'			8.18						



ORGANISM RECEIPT LOG

Date: 12/13/08		Time: 1320		NewFields Batch No. ABS 9925	
Organism: Meridia			Source: Aquatic BioSystems		
Address: On File				Invoice Attached <input checked="" type="radio"/> Yes <input type="radio"/> No	
Phone: On File			Contact: Scott / Amy		
No. Ordered: 1300		No. Received: 1430		Source Batch: 12/3 hatch	
Condition of Organisms: Good			Approximate Size or Age: 10 days		
Shipper: Fed Ex			B of L (Tracking No.): 6732 0731 9925		
Condition of Container: Good			Received By: BH		
Confirmation of ID of Organism: Yes <input checked="" type="radio"/> No				Technician (Initials): BH	
Notes:					
pH (Units)	Temp. (°C)	D.O. (mg/L)	Conductivity or Salinity (Include Units)	Technician (Initials)	
7.6	17.6	12.1	27	BH	
Notes:					

1300 Blue Spruce Drive, Suite C
Fort Collins, Colorado 80524



Toll Free: 800/331-5916
Tel: 970/484-5091 Fax: 970/484-2514

ORGANISM HISTORY

DATE: 12/12/08

SPECIES: Menidia beryllina

AGE: 9 day

LIFE STAGE: Juvenile

HATCH DATE: 12/3/08

BEGAN FEEDING: Immediately

FOOD: Rotifers, Artemia sp.

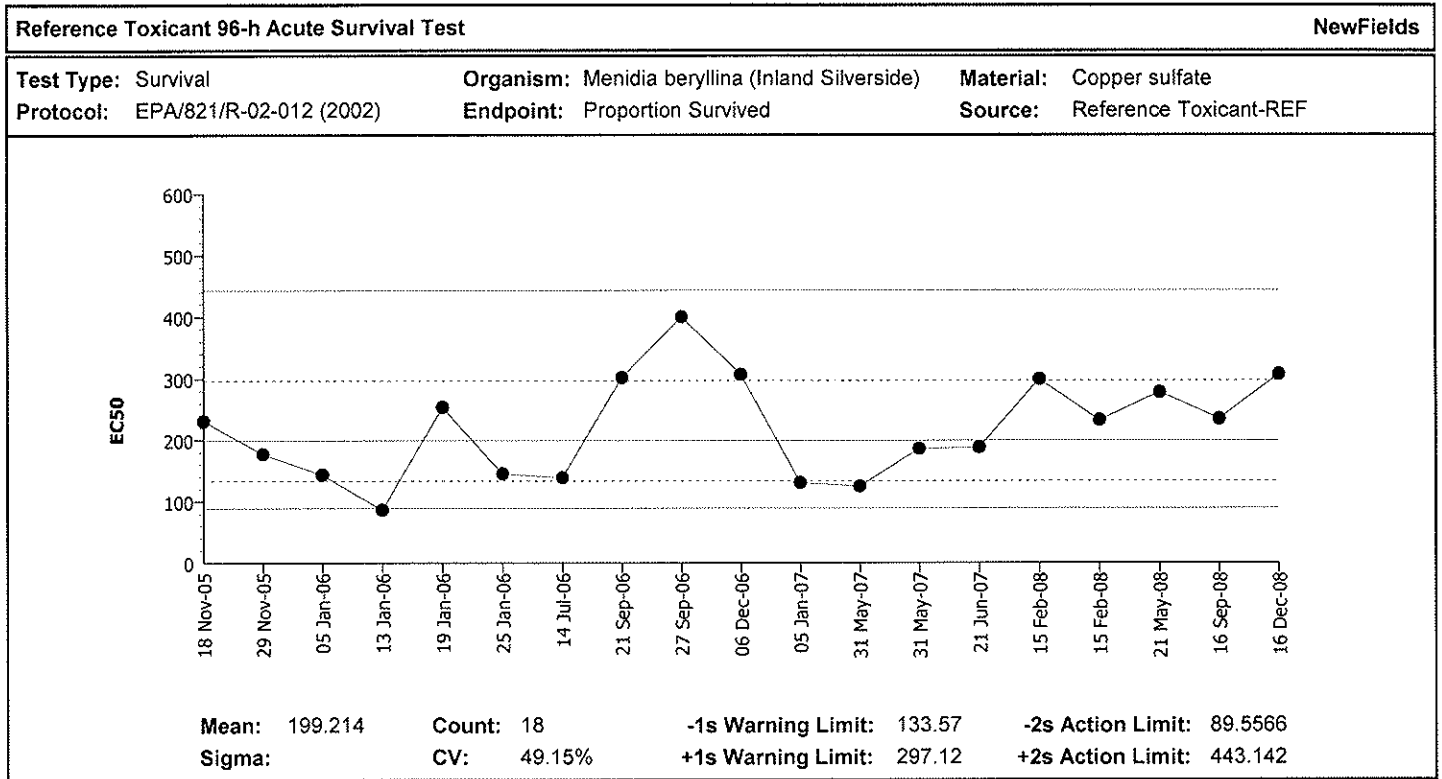
Water Chemistry Record:

	Current	Range
TEMPERATURE:	<u>24 °C</u>	<u>23-26 °C</u>
SALINITY/CONDUCTIVITY:	<u>23 ppt</u>	<u>23-27 ppt</u>
TOTAL HARDNESS (as CaCO ₃):	<u>--</u>	<u>--</u>
TOTAL ALKALINITY (as CaCO ₃):	<u>145 mg/l</u>	<u>125-190 mg/l</u>
pH:	<u>7.95</u>	<u>7.22-8.38</u>

Comments:



Facility Supervisor



Quality Control Data										
Point	Year	Month	Day	Data	Delta	Sigma	Warning	Action	Test Link	Analysis
1	2005	Nov	18	231.0145	31.80026	0.37048			00-5400-7163	12-4250-6835
2			29	177.3950	-21.8192	-0.29018			09-7179-4794	11-4481-7307
3	2006	Jan	5	143.6334	-55.5808	-0.81829			11-9868-2213	07-1919-5333
4			13	86.05408	-113.160	-2.09980	(-)	(-)	06-6412-0123	07-5635-3913
5			19	253.8606	54.64636	0.60638			14-3550-5235	08-7655-3856
6			25	145.0174	-54.1968	-0.79430			09-8902-4433	10-2133-1793
7		Jul	14	138.7884	-60.4259	-0.90413			12-3489-2800	05-4639-7387
8		Sep	21	301.4977	102.2834	1.03659	(+)		13-2437-4560	13-4184-0272
9			27	400.0000	200.7857	1.74378	(+)		06-7939-8708	18-0414-2219
10		Dec	6	306.3108	107.0965	1.07621	(+)		13-1351-8433	14-1844-9693
11	2007	Jan	5	130.3407	-68.8735	-1.06122	(-)		10-8312-3501	05-6092-7194
12		May	31	124.1810	-75.0332	-1.18233	(-)		07-3393-4206	09-0298-1066
13			31	185.8127	-13.4015	-0.17421			15-1085-6486	07-8998-8487
14		Jun	21	187.8662	-11.3481	-0.14672			11-4444-5191	09-2989-1578
15	2008	Feb	15	298.8723	99.65806	1.01471	(+)		09-0873-1841	02-2843-3056
16			15	232.3128	33.09856	0.38450			02-3273-3535	02-4532-0088
17		May	21	277.7252	78.51096	0.83114			09-4275-9770	06-5552-2016
18		Sep	16	234.4507	35.23646	0.40741			15-9104-3417	05-6930-9029
19		Dec	16	306.7106	107.4963	1.07947	(+)		14-9978-8744	16-1416-6951

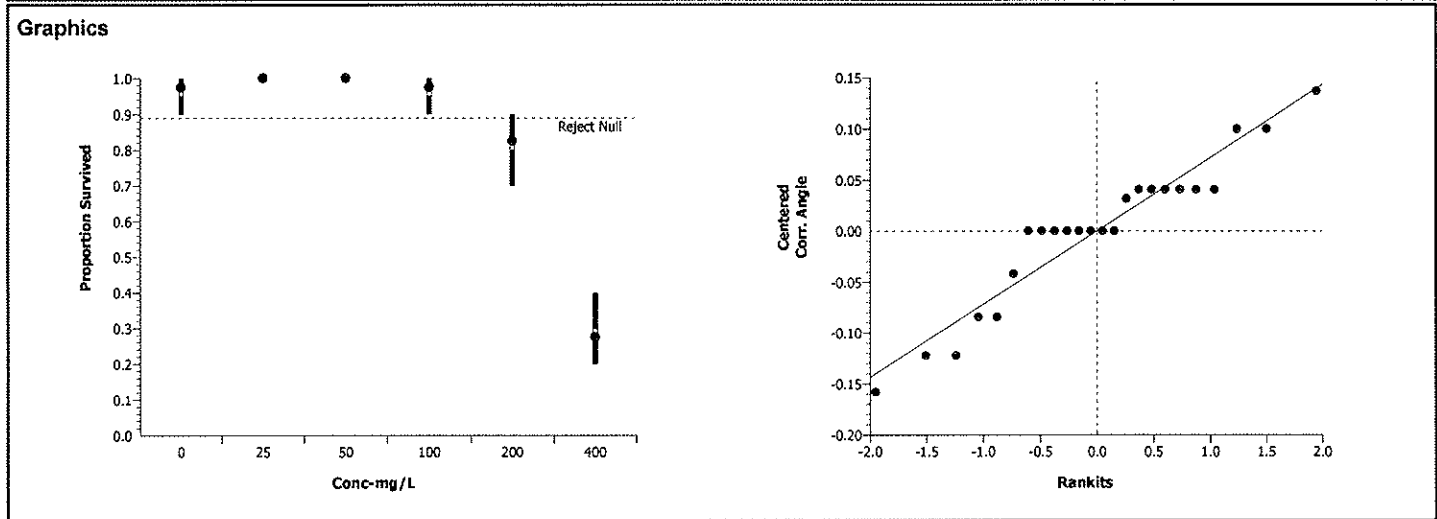
CETIS Analysis Detail

Comparisons: Page 1 of 2
 Report Date: 26 Jan-09 2:15 PM
 Analysis: 15-3351-5832

Reference Toxicant 96-h Acute Survival Test							NewFields			
Endpoint	Analysis Type		Sample Link	Control Link	Date Analyzed	Version				
Proportion Survived	Comparison		14-9978-8744	14-9978-8744	26 Jan-09 2:15 PM	CETISv1.1.2				
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD		
Dunnett's Multiple Comparison	C > T	Angular (Corrected)		100	200	1	141.421	8.76%		
Group Comparisons										
Control	vs	Conc-mg/L	Statistic	Critical	P-Value	MSD	Decision(0.05)			
Dilution Water		25	-0.7044	2.40711	0.9629	0.13923	Non-Significant Effect			
		50	-0.7044	2.40711	0.9629	0.13923	Non-Significant Effect			
		100	0	2.40711	0.8333	0.13923	Non-Significant Effect			
		200	3.84102	2.40711	0.0026	0.13923	Significant Effect			
		400	14.2345	2.40711	0.0000	0.13923	Significant Effect			
ANOVA Table										
Source	Sum of Squares		Mean Square	DF	F Statistic	P-Value	Decision(0.05)			
Between	2.302818		0.4605636	5	68.83	0.00000	Significant Effect			
Error	0.1204472		0.0066915	18						
Total	2.42326548		0.4672551	23						
ANOVA Assumptions										
Attribute	Test		Statistic	Critical	P-Value	Decision(0.01)				
Variances	Modified Levene		2.13835	4.24788	0.10734	Equal Variances				
Distribution	Shapiro-Wilk W		0.92580		0.07856	Normal Distribution				
Data Summary										
Conc-mg/L	Control Type	Count	Original Data				Transformed Data			
			Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Water	4	0.97500	0.90000	1.00000	0.05000	1.37127	1.24905	1.41202	0.08149
25		4	1.00000	1.00000	1.00000	0.00000	1.41202	1.41202	1.41202	0.00027
50		4	1.00000	1.00000	1.00000	0.00000	1.41202	1.41202	1.41202	0.00027
100		4	0.97500	0.90000	1.00000	0.05000	1.37127	1.24905	1.41202	0.08149
200		4	0.82500	0.70000	0.90000	0.09574	1.14910	0.99116	1.24905	0.12475
400		4	0.27500	0.20000	0.40000	0.09574	0.54791	0.46365	0.68472	0.10634

CETIS Analysis Detail

Data Detail											
Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	1.00000	1.00000	1.00000	0.90000						
25		1.00000	1.00000	1.00000	1.00000						
50		1.00000	1.00000	1.00000	1.00000						
100		0.90000	1.00000	1.00000	1.00000						
200		0.70000	0.90000	0.90000	0.80000						
400		0.30000	0.20000	0.40000	0.20000						

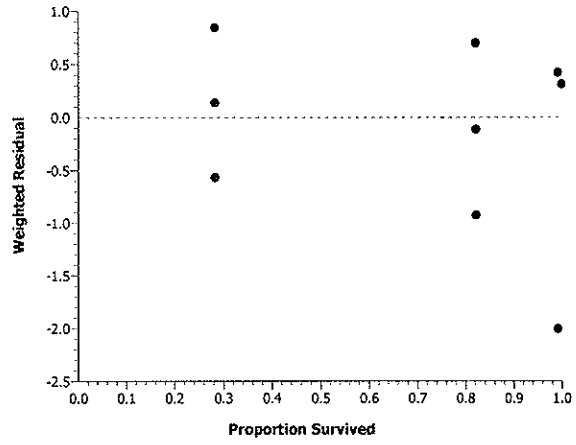
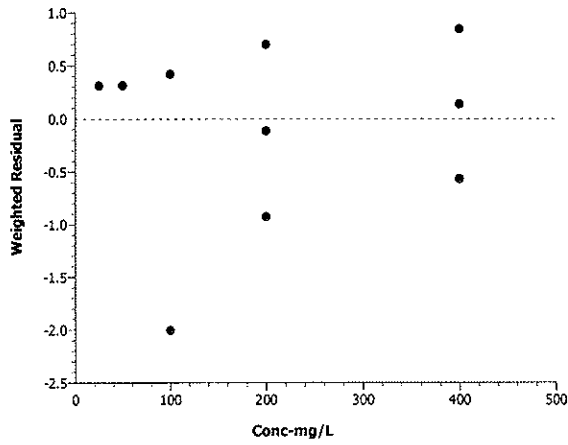
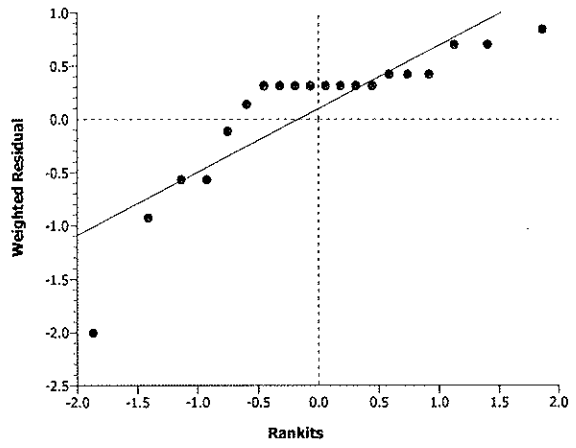
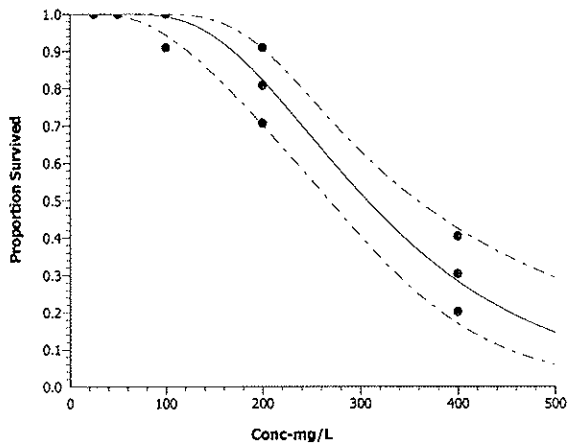


CETIS Analysis Detail

Reference Toxicant 96-h Acute Survival Test										NewFields	
Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version						
Proportion Survived	Linear Regression	14-9978-8744	14-9978-8744	26 Jan-09 2:15 PM	CETISv1.1.2						
Linear Regression Options											
Model Function	Threshold Option	Threshold	Threshold Opt	Reweighted	Pooled Groups	Het Corr					
Log-Normal [NED=A+B*log(X)]	Control Threshold	0.025	Yes	Yes	No	No					
Regression Summary											
Iters	Log Likelihood	Mu	Sigma	G	Chi-Sq	Critical	P-Value	Decision(0.05)			
6	-46.43390	-1.48064	0.20122	0.14677	8.54464	28.86930	0.96938	Non-Significant Heterogeneity			
Point Estimates											
% Effect	Conc-mg/L	95% LCL	95% UCL								
10	169.3781	115.752	205.8693								
15	189.749	137.8143	225.6517								
20	207.6726	157.8443	243.4385								
25	224.3929	176.785	260.6166								
40	272.7412	230.3251	316.0407								
50	306.7106	264.4666	362.4163								
Regression Parameters											
Parameter	Estimate	Std Error	95% LCL	95% UCL	t Statistic	P-Value	Decision(0.05)				
Threshold	0.009592878	0.008460457	-0.00698962	0.02617537	1.134	0.27173	Not Significant				
Slope	4.969727	0.9713866	3.06581	6.873645	5.116	0.00007	Significant				
Intercept	-7.358364	2.329443	-11.92407	-2.792655	-3.159	0.00543	Significant				
Residual Analysis											
Attribute	Method	Statistic	Critical	P-Value	Decision(0.05)						
Variances	Modified Levene	1.164405	3.05557	0.36541	Equal Variances						
Distribution	Shapiro-Wilk W	0.7644958		0.00027	Non-normal Distribution						
Data Summary											
Conc-mg/	Control Type	Count	Calculated Variate(A/B)							A	B
			Mean	Minimum	Maximum	SE	SD				
0	Dilution Water	4	0.97500	0.90000	1.00000	0.01021	0.05000	39	40		
25		4	1.00000	1.00000	1.00000	0.00000	0.00000	40	40		
50		4	1.00000	1.00000	1.00000	0.00000	0.00000	40	40		
100		4	0.97500	0.90000	1.00000	0.01021	0.05000	39	40		
200		4	0.82500	0.70000	0.90000	0.01954	0.09574	33	40		
400		4	0.27500	0.20000	0.40000	0.01954	0.09574	11	40		

CETIS Analysis Detail

Graphics



CETIS Data Worksheet

Report Date: 26 Jan-09 2:15 PM

Link: 14-9978-8744

Reference Toxicant 96-h Acute Survival Test

NewFields

Start Date: 16 Dec-08

Species: Menidia beryllina

Sample Code: 1387875684

Ending Date: 20 Dec-08

Protocol: EPA/821/R-02-012 (2002)

Sample Source: Reference Toxicant

Sample Date: 16 Dec-08

Material: Cadmium chloride

Sample Station: P070930.98

Conc-mg/L	Code	Rep	Pos	# Exposed	# Survived	Notes
0	D	1	19	10	10	
0	D	2	16	10	10	
0	D	3	2	10	10	
0	D	4	23	10	9	
25		1	15	10	10	
25		2	11	10	10	
25		3	17	10	10	
25		4	10	10	10	
50		1	4	10	10	
50		2	20	10	10	
50		3	7	10	10	
50		4	18	10	10	
100		1	14	10	9	
100		2	13	10	10	
100		3	12	10	10	
100		4	21	10	10	
200		1	8	10	7	
200		2	5	10	9	
200		3	3	10	9	
200		4	24	10	8	
400		1	9	10	3	
400		2	22	10	2	
400		3	6	10	4	
400		4	1	10	2	



Reference Toxicant Test Water Quality Datasheet

P070930.98

CLIENT	PND Engineers	PROJECT	Douglas Harbor	SPECIES	Menidia beryllina	PROTOCOL	Port Gamble / Bath	TEST START DATE	16Dec08	TIME	
NEWFIELDS JOB NUMBER	1414-001-860	PROJECT MANAGER	Brian Hester	QUANTITY OF STOCK TARGET	1.572 mL	QUANTITY OF DILUENT TARGET	2000 mL	TEST END DATE	20Dec08	TIME	
NEWFIELDS LABORATORY	Port Gamble Bath	DILUTION WATER BATCH	FSW121608	QUANTITY OF STOCK ACTUAL		QUANTITY OF DILUENT ACTUAL		INITIALAND DATE		PROTOCOL	USEPAUSCOE 1988 / NEWFIELDS B10067

WATER QUALITY DATA

CLIENT/ NEWFIELDS ID	CONCENTRATION value units	DAY	REP	DO (mg/L)		TEMP. °C		SALINITY ppt		pH		Date	Tech	FEEDING
				meter	mg/L	meter	°C	meter	ppt	meter	unit			
		0	All		> 3.7		20 ± 2		25 ± 2		7.8 ± 0.5			
Ref. Tox.-copper	0 mg/L	1	1	3	6.7	3	20.2	3	26	3	7.4	12/17	✓	X
		2	2	3	6.2	3	19.8	3	26	3	7.7	12/18	✓	BH
		3	3	3	6.5	3	19.2	3	26	3	7.8	12/19	✓	
		4	4	3	6.7	3	19.6	3	26	3	7.9	12/26/08	BH	
		0	All											X
Ref. Tox.-copper	25 mg/L	1	1	3	6.7	3	20.2	3	26	3	7.5	12/17	✓	
		2	2	3	6.4	3	19.6	3	26	3	7.7	12/18	✓	BH
		3	3	3	6.4	3	19.4	3	26	3	7.9	12/19	✓	
		4	4	3	6.8	3	19.6	3	26	3	7.9	12/26/08	BH	
		0	All											X
Ref. Tox.-copper	50 mg/L	1	1	3	6.9	3	20.2	3	26	3	7.5	12/17	✓	
		2	2	3	6.6	3	19.7	3	26	3	7.7	12/18	✓	BH
		3	3	3	6.6	3	19.5	3	26	3	7.9	12/19	✓	
		4	4	3	6.7	3	19.5	3	26	3	7.9	12/26/08	BH	

① 12 12/19/08 ✓

② 16 12-20-08 BH
③ 20 12-20-08 BH



Reference Toxicant Test Water Quality Datasheet

CLIENT PND Engineers NEWFIELDS JOB NUMBER 1414-001-860 NEWFIELDS LABORATORY Port Gamble Bath	PROJECT Douglas Harbor PROJECT MANAGER Brian Hester DILUTION WATER BATCH FSW121608	SPECIES <i>Menidia beryllina</i> QUANTITY OF STOCK TARGET 1.572 mL QUANTITY OF STOCK ACTUAL	PROTOCOL Port Gamble / Bath QUANTITY OF DILUENT TARGET 2000 mL QUANTITY OF DILUENT ACTUAL	TEST START DATE 16Dec08 TEST END DATE 20Dec08 INITIAL LAND DATE USEPA/USCOE 1998 / NEWFIELDS B10067	TIME
---	---	---	---	--	------

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	TEST CONDITIONS		DAY	REP	DO (mg/L)		TEMP. (°C)		SALINITY (ppt)		pH		Date	Tech	FEEDING
	value	units			meter	mg/L	meter	°C	meter	ppt	meter	unit			
Ref.Tox.-copper	100	mg/L	0	All	3	7.2	3	18.5	3	25	3	7.5	12/16/08	MMB	X
			1	1	3	6.4	3	20.1	3	26	3	7.5	12/17	J	
			2	2	3	6.6	3	19.4	3	26	3	7.7	12/18	J	BH
			3	3	3	6.5	3	19.3	3	26	3	7.9	12/19	J	
			4	4	3	6.6	3	19.5	3	26	3	7.9	12/20/08	BH	
Ref.Tox.-copper	200	mg/L	0	All	3	7.2	3	18.9	3	25	3	7.5	12/16/08	MMB	X
			1	1	3	6.8	3	20.2	3	26	3	7.5	12/17	J	
			2	2	3	6.5	3	19.7	3	26	3	7.7	12/18	J	BH
			3	3	3	6.5	3	19.3	3	26	3	7.9	12/19	J	
			4	4	3	6.6	3	19.5	3	26	3	7.9	12/20/08	BH	
Ref.Tox.-copper	400	mg/L	0	All	3	7.3	3	19.0	3	25	3	7.6	12/16/08	MMB	X
			1	1	3	6.9	3	20.2	3	26	3	7.5	12/17	J	
			2	2	3	6.6	3	19.7	3	26	3	7.7	12/18	J	BH
			3	3	3	7.0	3	19.3	3	26	3	7.9	12/19	J	
			4	4	3	6.9	3	19.4	3	26	3	8.0	12/20/08	BH	

① WC, MMB 12/16/08

**REFERENCE TOXICANT TEST
SURVIVAL DATASHEET**



SPECIES
Menidia beryllina

NEWFIELDS LABORATORY PROTOCOL
Port Gamble Bath USEPA/USCOE 1998

CLIENT: PND Engineers PROJECT: Douglas Harbor NEWFIELDS JOB NO.: PROJECT MANAGER: Brian Hester

SURVIVAL & BEHAVIOR DATA

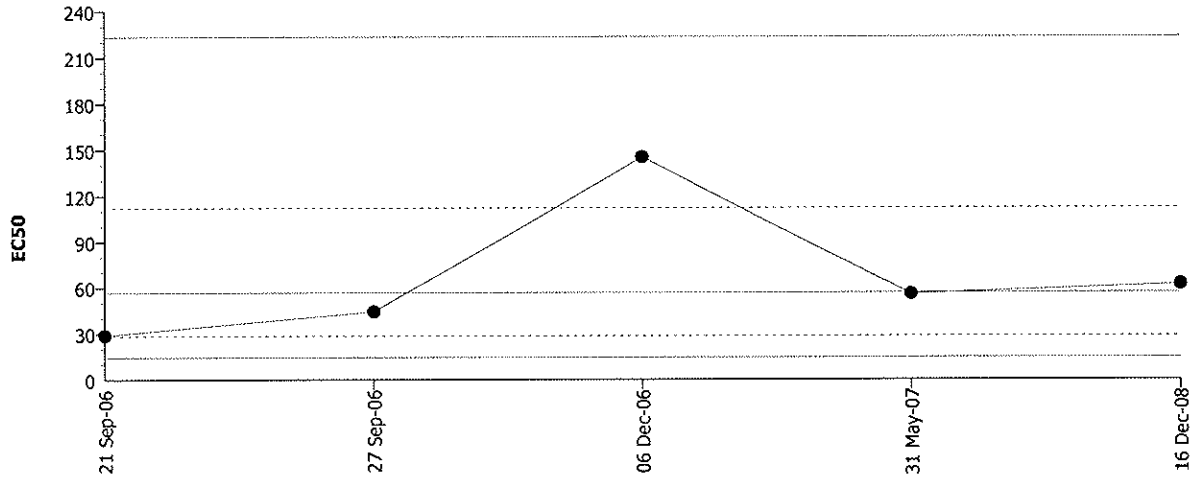
OBSERVATION KEY N = normal LOE= loss of equilibrium Q = quiescent DC = discoloration NB = no body F= Floating on Surface				DAY 1			DAY 2			DAY 3			DAY 4		
				DATE	TECHNICIAN	INITIAL # OF ORGANISMS	DATE	TECHNICIAN	INITIAL # OF ORGANISMS	DATE	TECHNICIAN	INITIAL # OF ORGANISMS	DATE	TECHNICIAN	INITIAL # OF ORGANISMS
Ref.Tox.- copper	0 mg/l	1	10	10	0	N	10	0	N	10	0	N	10	0	N
		2	↓	10	0	N	10	0	↓	10	0	N	10	0	↓
		3	↓	10	0	N	10	0	↓	10	0	N	10	0	↓
		4	↓	10	0	N	10	0	↓	9	0	INB	9	0	↓
		5													
Ref.Tox.- copper	25 mg/l	1	10	10	0	N	10	0	N	10	0	N	10	0	N
		2	↓	10	0	N	10	0	↓	10	0	N	10	0	↓
		3	↓	10	0	N	10	0	↓	10	0	N	10	0	↓
		4	↓	10	0	N	10	0	↓	10	0	N	10	0	↓
		5													
Ref.Tox.- copper	50 mg/l	1	10	10	0	N	10	0	N	10	0	N	10	0	N
		2	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓
		3	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓
		4	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓
		5													
Ref.Tox.- copper	100 mg/l	1	10	10	0	N	9	1	N	9	0	N	9	0	N
		2	↓	10	0	↓	10	0	N	10	0	N	10	0	↓
		3	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓
		4	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓
		5													
Ref.Tox.- copper	200 mg/l	1	10	9	1	N	9	0	N	7	2	N	7	0	N
		2	↓	10	0	↓	10	0	↓	9	1	N	9	0	↓
		3	↓	10	0	↓	10	0	↓	9	1	N	9	0	↓
		4	↓	10	0	↓	9	1	↓	9	0	N	8	1	↓
		5													
Ref.Tox.- copper	400 mg/l	1	10	9	1	LOE	7	2	N	6	1	N	3	3	N
		2	↓	8	2	N	5	3	↓	2	3	10	2	0	↓
		3	↓	9	1	LOE	4	5	↓	4	0	10	4	0	↓
		4	↓	10	0	LOE	6	4	↓	3	3	N	2	1	↓
		5													

CETIS QC Chart

Reference Toxicant 96-h Acute Survival Test

NewFields

Test Type: Survival Organism: Menidia beryllina (Inland Silverside) Material: Total Ammonia
Protocol: EPA/821/R-02-012 (2002) Endpoint: Proportion Survived Source: Reference Toxicant-REF



Mean: 56.4919 Count: 4 -1s Warning Limit: 28.4196 -2s Action Limit: 14.2972
Sigma: CV: 98.78% +1s Warning Limit: 112.293 +2s Action Limit: 223.214

Quality Control Data

Point	Year	Month	Day	Data	Delta	Sigma	Warning	Action	Test Link	Analysis
1	2006	Sep	21	28.57958	-27.9123	-0.99183			10-8951-7643	03-4282-9545
2			27	44.12674	-12.3651	-0.35957			05-7540-6214	09-5511-4030
3		Dec	6	145.1421	88.65019	1.37350	(+)		12-3331-0918	10-3654-7990
4	2007	May	31	55.64088	-0.85103	-0.02209			04-5535-7640	09-4900-2113
5	2008	Dec	16	62.07984	5.58793	0.13729			03-9705-7587	11-7827-3621

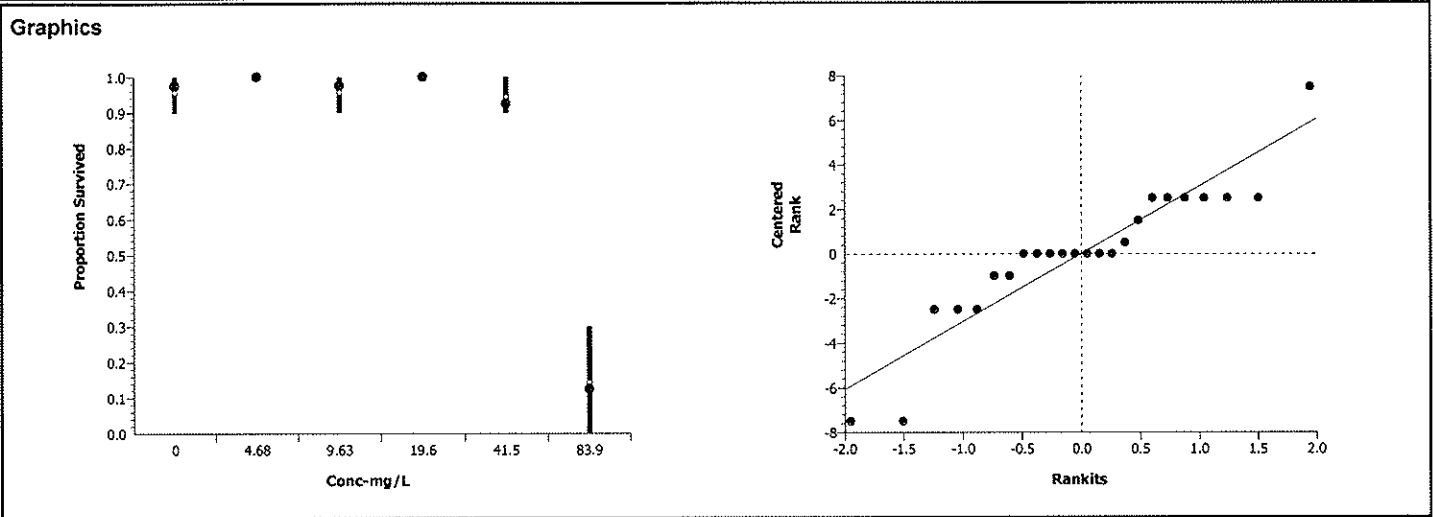
CETIS Analysis Detail

Comparisons: Page 1 of 2
 Report Date: 26 Jan-09 3:33 PM
 Analysis: 04-1924-2676

Reference Toxicant 96-h Acute Survival Test							NewFields			
Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version					
Proportion Survived	Comparison	03-9705-7587	03-9705-7587	26 Jan-09 3:33 PM	CETISv1.1.2					
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD		
Steel Many-One Rank	C > T	Rank		41.5	83.9	2.40964	59.0072	11.41%		
Group Comparisons										
Control	vs	Conc-mg/L	Statistic	Critical	P-Value	Ties	Decision(0.05)			
Dilution Water		4.68	20	10	0.9516	3	Non-Significant Effect			
		9.63	18	10	0.8333	3	Non-Significant Effect			
		19.6	20	10	0.9516	3	Non-Significant Effect			
		41.5	14	10	0.3451	1	Non-Significant Effect			
		83.9	10	10	0.0417	0	Significant Effect			
ANOVA Table										
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)				
Between	3.583466	0.7166931	5	65.10	0.00000	Significant Effect				
Error	0.1981555	0.0110086	18							
Total	3.78162105	0.7277017	23							
ANOVA Assumptions										
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)					
Variances	Modified Levene	4.64458	4.24788	0.00674	Unequal Variances					
Distribution	Shapiro-Wilk W	0.91320		0.04139	Normal Distribution					
Data Summary										
Conc-mg/L	Control Type	Count	Original Data				Transformed Data			
			Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Water	4	0.97500	0.90000	1.00000	0.05000	14.5	7	17	5
4.68		4	1.00000	1.00000	1.00000	0.00000	17	17	17	0
9.63		4	0.97500	0.90000	1.00000	0.05000	14.5	7	17	5
19.6		4	1.00000	1.00000	1.00000	0.00000	17	17	17	0
41.5		4	0.92500	0.90000	1.00000	0.05000	9.5	7	17	5
83.9		4	0.12500	0.00000	0.30000	0.15000	2.5	1.5	4	1.22474

CETIS Analysis Detail

Data Detail											
Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	0.90000	1.00000	1.00000	1.00000						
4.68		1.00000	1.00000	1.00000	1.00000						
9.63		1.00000	1.00000	0.90000	1.00000						
19.6		1.00000	1.00000	1.00000	1.00000						
41.5		0.90000	1.00000	0.90000	0.90000						
83.9		0.00000	0.20000	0.00000	0.30000						

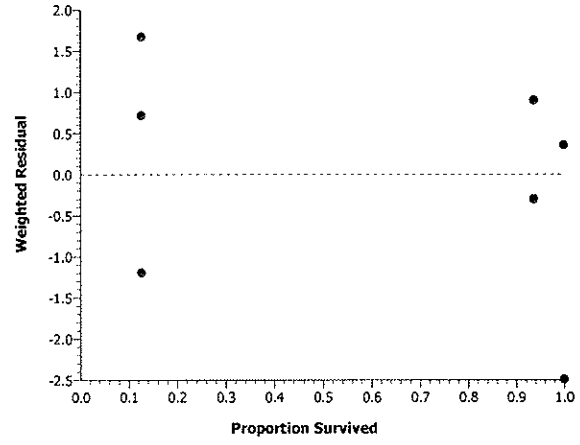
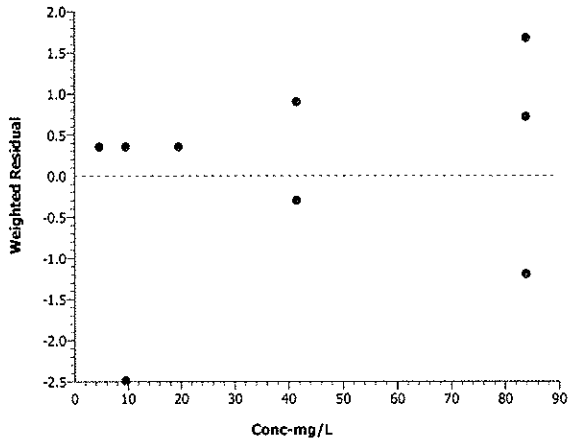
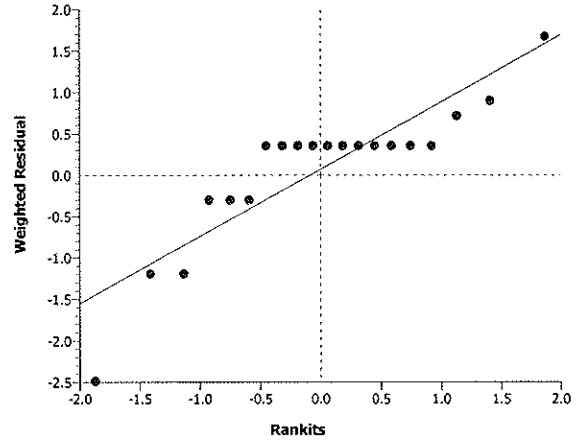
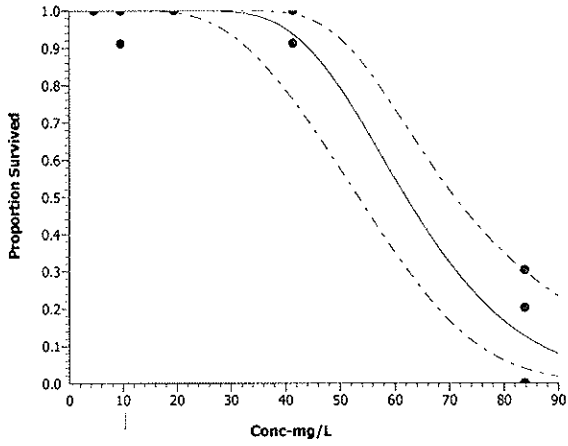


CETIS Analysis Detail

Reference Toxicant 96-h Acute Survival Test										NewFields
Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version					
Proportion Survived	Linear Regression	03-9705-7587	03-9705-7587	26 Jan-09 3:34 PM	CETISv1.1.2					
Linear Regression Options										
Model Function	Threshold Option	Threshold	Threshold Opt	Reweighted	Pooled Groups	Het Corr				
Log-Normal [NED=A+B*log(X)]	Control Threshold	0.025	Yes	Yes	No	No				
Regression Summary										
Iters	Log Likelihood	Mu	Sigma	G	Chi-Sq	Critical	P-Value	Decision(0.05)		
7	-35.17495	-1.22061	0.11447	0.09921	14.84533	28.86930	0.67256	Non-Significant Heterogeneity		
Point Estimates										
% Effect	Conc-mg/L	95% LCL	95% UCL							
10	44.28475	35.53597	50.62448							
15	47.24027	38.82708	53.47994							
20	49.72927	41.61313	55.92511							
25	51.96886	44.11839	58.16933							
40	58.06982	50.83852	64.58839							
50	62.07984	55.08631	69.13405							
Regression Parameters										
Parameter	Estimate	Std Error	95% LCL	95% UCL	t Statistic	P-Value	Decision(0.05)			
Threshold	0.01249639	0.008785831	-0.00472384	0.02971662	1.422	0.17203	Not Significant			
Slope	8.736083	1.403924	5.984391	11.48777	6.223	0.00001	Significant			
Intercept	-10.66336	2.52779	-15.61783	-5.708897	-4.218	0.00052	Significant			
Residual Analysis										
Attribute	Method	Statistic	Critical	P-Value	Decision(0.05)					
Variances	Modified Levene	2.010502	3.05557	0.14461	Equal Variances					
Distribution	Shapiro-Wilk W	0.8162125		0.00152	Non-normal Distribution					
Data Summary										
		Calculated Variate(A/B)								
Conc-mg/	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B	
0	Dilution Water	4	0.97500	0.90000	1.00000	0.01021	0.05000	39	40	
4.68		4	1.00000	1.00000	1.00000	0.00000	0.00000	40	40	
9.63		4	0.97500	0.90000	1.00000	0.01021	0.05000	39	40	
19.6		4	1.00000	1.00000	1.00000	0.00000	0.00000	40	40	
41.5		4	0.92500	0.90000	1.00000	0.01021	0.05000	37	40	
83.9		4	0.12500	0.00000	0.30000	0.03062	0.15000	5	40	

CETIS Analysis Detail

Graphics



CETIS Data Worksheet

Page 1 of 1
 Report Date: 26 Jan-09 3:34 PM
 Link: 03-9705-7587

Reference Toxicant 96-h Acute Survival Test

NewFields

Start Date: 16 Dec-08 06:30 PM Species: Menidia beryllina Sample Code: 468461916
 Ending Date: 20 Dec-08 04:30 PM Protocol: EPA/821/R-02-012 (2002) Sample Source: Reference Toxicant
 Sample Date: 16 Dec-08 06:30 PM Material: Total Ammonia Sample Station: P060224.50

Conc-mg/L	Code	Rep	Pos	# Exposed	# Survived	Notes
0	D	1	17	10	9	
0	D	2	19	10	10	
0	D	3	20	10	10	
0	D	4	21	10	10	
4.68		1	16	10	10	
4.68		2	23	10	10	
4.68		3	9	10	10	
4.68		4	4	10	10	
9.63		1	8	10	10	
9.63		2	7	10	10	
9.63		3	6	10	9	
9.63		4	24	10	10	
19.6		1	12	10	10	
19.6		2	22	10	10	
19.6		3	10	10	10	
19.6		4	1	10	10	
41.5		1	3	10	9	
41.5		2	15	10	10	
41.5		3	18	10	9	
41.5		4	5	10	9	
83.9		1	2	10	0	
83.9		2	13	10	2	
83.9		3	11	10	0	
83.9		4	14	10	3	



Reference Toxicant Test Water Quality Datasheet

CLIENT	PND Engineers	PROJECT	Douglas Harbor	SPECIES	Port Gamble / Bath	TEST START DATE	16Dec08	TIME	1830
NEWFIELDS JOB NUMBER	1414-001-860	PROJECT MANAGER	Brian Hester	Menidia beryllina	QUANTITY OF DILUENT TARGET	20Dec08	20Dec08	TIME	1630
NEWFIELDS LABORATORY	Port Gamble Bath	DILUTION WATER BATCH	FSW121608	QUANTITY OF STOCK TARGET	24 mL	INITIAL LAND DATE	12/16/08	PROTOCOL	USEPA/USCOE 1988 / NEWFIELDS BIO067
				QUANTITY OF STOCK ACTUAL	24.0				
				QUANTITY OF DILUENT TARGET	2000 mL				
				QUANTITY OF DILUENT ACTUAL	2000.0				

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	TEST CONDITIONS		CONCENTRATION value	units	DAY	REP	DO (mg/L)		TEMP (C)		SALINITY (ppt)		pH		Date	Tech	FEEDING
	DO (mg/L)						TEMP (C)		SALINITY (ppt)		pH						
	meter	mg/L					meter	°C	meter	ppt	meter	unit					
Ref. Tox.-ammonia	0	mg/L			0	All	3	7.2	3	18.2	3	25	3	7.6	12/16/08	MMMB	X
					1	1	3	6.8	3	20.1	3	26	3	7.5	12/17	✓	
					2	2	3	6.3	3	19.6	3	26	3	7.7	12/18	✓	BH
					3	3	3	6.6	3	19.3	3	26	3	7.7	12/19	✓	
					4	4	3	6.8	3	19.6	3	26	3	7.7	12/20	BH	
Ref. Tox.-ammonia	4	mg/L			0	All	3	7.4	3	18.1	3	25	3	7.6	12/16/08	MMMB	X
					1	1	3	6.7	3	20.2	3	26	3	7.5	12/17	✓	
					2	2	3	6.4	3	19.7	3	26	3	7.7	12/18	✓	BH
					3	3	3	6.4	3	19.3	3	26	3	7.8	12/17	✓	
					4	4	3	6.7	3	19.6	3	26	3	7.5	12/20	BH	
Ref. Tox.-ammonia	8	mg/L			0	All	3	7.4	3	18.3	3	25	3	7.6	12/16/08	MMMB	X
					1	1	3	6.7	3	20.4	3	26	3	7.5	12/17	✓	
					2	2	3	6.4	3	19.8	3	26	3	7.7	12/18	✓	BH
					3	3	3	6.4	3	19.4	3	26	3	7.8	12/19	✓	
					4	4	3	6.8	3	19.5	3	26	3	7.8	12/20	BH	

① MK 12-2008 B14



Reference Toxicant Test Water Quality Datasheet

CLIENT PND Engineers NEWFIELDS JOB NUMBER 1414-001-860 NEWFIELDS LABORATORY Port Gamble Bath	PROJECT Douglas Harbor PROJECT MANAGER Brian Hester DILUTION WATER BATCH FSW121608	SPECIES <i>Menidia beryllina</i> QUANTITY OF STOCK TARGET 24 mL QUANTITY OF STOCK ACTUAL	PROTOCOL Port Gamble / Bath QUANTITY OF DILUENT TARGET 2000 mL QUANTITY OF DILUENT ACTUAL	TEST START DATE 16Dec08 TEST END DATE 20Dec08 INITIAL/LAND DATE USEPA/USCOE 1988 / NEWFIELDS BIO067	TIME
---	---	--	---	--	------

WATER QUALITY DATA

CLIENT/ NEWFIELDS ID	TEST CONDITIONS value	CONCENTRATION units	DAY	REP	DO (mg/L)		TEMP. (°C)		SALINITY (ppt)		pH		Date	Tech	FEEDING
					meter	mg/L	meter	°C	meter	ppt	meter	unit			
Ref.Tox.-ammonia	16 mg/L		0	All	3	7.4	3	18.1	3	25	3	7.6	12/16/08	MMB	
			1	1	3	6.9	3	20.2	3	26	3	7.5	12/17/08	✓	
			2	2	3	6.5	3	19.8	3	26	3	7.7	12/18/08	✓	BH
			3	3	3	6.4	3	19.5	3	26	3	7.8	12/19	✓	
			4	4	3	6.7	3	19.6	3	27	3	7.8	12/20/08	BH	
Ref.Tox.-ammonia	32 mg/L		0	All	3	7.3	3	18.1	3	25	3	7.5	12/16/08	MMB	
			1	1	3	6.7	3	20.3	3	26	3	7.5	12/17	✓	
			2	2	3	6.5	3	19.8	3	26	3	7.7	12/18/08	✓	BH
			3	3	3	6.5	3	19.5	3	26	3	7.8	12/19/08	✓	
			4	4	3	6.7	3	19.6	3	26	3	7.8	12/20/08	BH	
Ref.Tox.-ammonia	64 mg/L		0	All	3	7.4	3	18.2	3	25	3	7.4	12/16/08	MMB	
			1	1	3	6.8	3	20.3	3	26	3	7.4	12/17	✓	
			2	2	3	6.3	3	19.8	3	26	3	7.7	12/18/08	✓	BH
			3	3	3	6.6	3	19.3	3	26	3	7.8	12/19/08	✓	
			4	4	3	6.7	3	19.5	3	27	3	7.7	12/20/08	BH	

**REFERENCE TOXICANT TEST
SURVIVAL DATASHEET**



SPECIES
Menidia beryllina

CLIENT PND Engineers	PROJECT Douglas Harbor	NEWFIELDS JOB NO. 1414-001-860	PROJECT MANAGER Brian Hester	NEWFIELDS LABORATORY Port Gamble Bath	PROTOCOL USEPA/USCOE 1998
-------------------------	---------------------------	-----------------------------------	---------------------------------	--	------------------------------

SURVIVAL & BEHAVIOR DATA

OBSERVATION KEY N = normal LOE= loss of equilibrium Q = quiescent DC = discoloration NB = no body F= Floating on Surface				DAY 1			DAY 2			DAY 3			DAY 4			
				DATE 12/17/08			DATE 12/18/08			DATE 12/19/08			DATE 12/20/08			
				TECHNICIAN CR			TECHNICIAN CR			TECHNICIAN BHH			TECHNICIAN MMRB			
CLIENT/ NEWFIELDS ID	CONC.		REP	INITIAL NUMBER	DAY 1			DAY 2			DAY 3			DAY 4		
	value	units			#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS
Ref.Tox.- ammonia	0 mg/l	1	10	10	0	N	9	1	N	9	0	N	9	0	N	
		2	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓	
		3	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓	
		4	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓	
		5														
Ref.Tox.- ammonia	4 mg/l	1	10	10	0	N	10	0	N	10	0	N	10	0	N	
		2	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓	
		3	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓	
		4	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓	
		5														
Ref.Tox.- ammonia	8 mg/l	1	10	10	0	N	10	0	N	10	0	N	10	0	N	
		2	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓	
		3	↓	10	0	↓	10	0	↓	10	0	N	9	1	↓	
		4	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓	
		5														
Ref.Tox.- ammonia	16 mg/l	1	10	10	0	N	10	0	N	10	0	N	10	0	N	
		2	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓	
		3	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓	
		4	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓	
		5														
Ref.Tox.- ammonia	32 mg/l	1	10	10	0	N	10	0	N	10	0	N	9	1	N	
		2	↓	10	0	↓	10	0	↓	10	0	N	10	0	↓	
		3	↓	10	0	↓	10	0	↓	10	0	N	9	1	↓	
		4	↓	10	0	↓	10	0	↓	10	0	N	9	1	↓	
		5														
Ref.Tox.- ammonia	64 mg/l	1	10	10	0	N	10	0	N	6	4	2Q	8	6	N	
		2	↓	10	0	↓	10	0	↓	6	4	2Q	2	4	↓	
		3	↓	9	1	N	9	0	↓	2	7	N	8	2	↓	
		4	↓	10	0	↓	10	0	↓	9	1	2Q	3	6	↓	
		5														



Reference Toxicant Ammonia Spiking Worksheet

Mem. dia

12/16/08

~~Lepto NH₃ RT~~

~~10/1/08~~

Assumptions in Model
Stock ammonia concentration is 9,000 mg/L = 9 mg/mL

Actual Reading
~~21775.00~~ 8000

Test Solutions			Volume of stock to reach desired concentration	
Measured Concentration mg/L	Desired Concentration mg/L	Volume mL	mL stock to increase	
64	2000		FRESH WATER	SALT WATER
			16.000	24
			0.000	0
			0.000	0
			0.000	0
			0.000	0
			0.000	0

Table D3. Test Results for the SPP Mysid Test

Treatment	SPP (%)	Rep	# Surviving	# Dead	Percentage Survival	Mean Percentage Survival	SD
Control	0	1	10	0	100	98	4.5
		2	10	0	100		
		3	9	1	90		
		4	10	0	100		
		5	10	0	100		
Site Water	0	1	10	0	100	98	4.5
		2	10	0	100		
		3	10	0	100		
		4	9	1	90		
		5	10	0	100		
Area 1 comp	10	1	10	0	100	96	5.5
		2	10	0	100		
		3	9	1	90		
		4	9	1	90		
		5	10	0	100		
Area 1 comp	50	1	10	0	100	100	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Area 1 comp	100	1	10	0	100	98	4.5
		2	10	0	100		
		3	10	0	100		
		4	9	1	90		
		5	10	0	100		

Treatment	SPP (%)	Rep	# Surviving	# Dead	Percentage Survival	Mean Percentage Survival	SD
Area 2 comp	10	1	10	0	100	98	4.5
		2	9	1	90		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Area 2 comp	50	1	10	0	100	98	4.5
		2	10	0	100		
		3	10	0	100		
		4	9	1	90		
		5	10	0	100		
Area 2 comp	100	1	10	0	100	98	4.5
		2	10	0	100		
		3	10	0	100		
		4	9	1	90		
		5	10	0	100		
Area 4a comp	10	1	9	1	90	98	4.5
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Area 4a comp	50	1	10	0	100	100	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Area 4a comp	100	1	10	0	100	100	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		

Treatment	SPP (%)	Rep	# Surviving	# Dead	Percentage Survival	Mean Percentage Survival	SD
Area 4b comp	10	1	10	0	100	100	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Area 4b comp	50	1	10	0	100	100	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Area 4b comp	100	1	10	0	100	100	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Lower Comp	10	1	10	0	100	98	4.5
		2	10	0	100		
		3	10	0	100		
		4	9	1	90		
		5	10	0	100		
Lower Comp	50	1	10	0	100	100	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		
Lower Comp	100	1	10	0	100	100	0.0
		2	10	0	100		
		3	10	0	100		
		4	10	0	100		
		5	10	0	100		

Table D4. Water Quality Summary for the 10-Day Actuetest with *Mysid* Test

Treatment	Conc. (%)	Dissolved Oxygen (mg/L)			Temperature (°C)			Salinity (ppt)			pH (units)		
		Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Control Site Water		6.0	5.2	7.6	19.6	19.0	20.3	26.1	25.0	27.0	7.5	7.3	7.8
	10	6.2	5.3	8.7	19.6	19.2	20.0	24.9	24.0	26.0	7.7	7.4	7.9
	50	5.8	4.9	7.7	19.7	19.2	20.3	25.8	25.0	26.0	7.7	7.4	7.9
Area 1 comp	100	5.8	4.9	7.5	19.7	19.1	20.5	25.8	25.0	26.0	7.8	7.4	7.9
	10	5.4	4.6	7.0	19.7	19.2	20.2	24.9	24.0	25.0	7.9	7.4	8.0
	50	5.7	4.9	7.5	19.8	19.2	20.7	25.8	25.0	26.0	7.7	7.5	8.0
Area 2 comp	100	5.8	5.1	7.6	19.8	19.2	20.5	25.7	25.0	26.0	7.8	7.6	8.0
	10	5.6	4.8	7.5	19.8	19.2	21.2	24.9	24.0	25.0	7.9	7.8	8.1
	50	5.8	5.2	7.4	19.8	19.2	21.1	25.8	25.0	26.0	7.8	7.7	8.0
Area 4a comp	100	5.8	5.2	7.3	19.8	19.2	20.7	25.8	25.0	26.0	7.8	7.7	8.0
	10	5.7	5.3	6.8	19.8	19.4	20.6	24.9	24.0	26.0	8.0	7.8	8.1
	50	5.8	5.1	7.4	19.7	19.3	20.4	25.8	25.0	26.0	7.8	7.7	8.0
Area 4b comp	100	5.6	4.7	7.5	19.7	19.3	20.7	25.8	25.0	26.0	7.9	7.7	8.0
	10	5.5	4.7	7.4	19.7	19.2	20.5	25.7	25.0	26.0	8.0	7.8	8.1
	50	5.7	5.2	7.4	19.7	19.3	20.4	25.7	25.0	26.0	7.8	7.4	8.0
Lower Comp	100	5.8	5.0	7.7	19.7	19.3	20.3	25.8	25.0	26.0	7.8	7.5	8.0
	10	6.0	5.4	7.8	19.6	19.2	20.1	24.8	24.0	25.0	7.8	7.6	8.0

96 HOUR SUSPENDED PARTICULATE PHASE TEST DATA SHEET 3



CLIENT PND Engineers	PROJECT Douglas Harbor	NEWFIELDS JOB NO. 1414-001-860	PROJECT MANAGER Brian Hester
		NEWFIELDS LABORATORY Port Gamble / Bath	SPECIES Mysidopsis bahia
		PROTOCOL USEPA/USCOE 1998	

SURVIVAL & BEHAVIOR DATA

OBSERVATION KEY N = normal LOE = loss of equilibrium Q = quiescent DC = discoloration NB = no body F = Floating on Surface	CONC. value	REP	INITIAL NUMBER	Day 1				Day 2				Day 3				Day 4							
				DATE		TECHNICIAN		DATE		TECHNICIAN		DATE		TECHNICIAN		DATE		TECHNICIAN					
				#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS		
Control /	0%	1	10	12/18/08		N	10	0	N	10	0	N	10	0	N	10	0	N	10	0			
						N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	
						N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0
						N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0
						N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0
Site Water /	100%	1	10	12/18/08		N	10	0	N	10	0	N	10	0	N	10	0	N	10	0			
						N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	
						N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0
						N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0
						N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0

96 HOUR SUSPENDED PARTICULATE PHASE TEST DATA SHEET 3



CLIENT PND Engineers	PROJECT Douglas Harbor	NEWFIELDS JOB NO. 1414-001-860	PROJECT MANAGER Brian Hester	SPECIES Mysidopsis bahia
		NEWFIELDS LABORATORY Port Gamble / Bath	PROTOCOL USEPA/USCOE 1998	

SURVIVAL & BEHAVIOR DATA

OBSERVATION KEY N = normal LOE= loss of equilibrium Q = quiescent DC = discoloration NB = no body F = Floating on Surface	CLIENT/NEWFIELDS ID	CONC.		INITIAL NUMBER	Day 1			Day 2			Day 3			Day 4						
		value	units		#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS				
		value	units																	
					DATE	12/18/08	TECHNICIAN	F	DATE	12/19/08	TECHNICIAN	MMB	DATE	12/20/08	TECHNICIAN	MMB	DATE	12/21/08	TECHNICIAN	MMB
					INITIAL # OF ORGANISMS															
Area 1 comp /		10 %		1		10	♀	N	10	♂	N	2	10	♂	N	2	10	♂	N	2
				2		10	♀	N	10	♂	N	2	10	♂	N	2	10	♂	N	2
				3		9	♀	INB	9	♂	N	N	9	♂	N	2	9	♂	N	2
				4		10	♀	N	10	♂	N	2	10	♂	N	2	10	♂	N	2
				5		10	♀	N	10	♂	N	2	10	♂	N	2	10	♂	N	2
Area 1 comp /		50 %		1		10	♀	N	10	♂	N	N	10	♂	N	N	10	♂	N	N
				2		10	♀	N	10	♂	N	N	10	♂	N	N	10	♂	N	N
				3		10	♀	N	10	♂	N	N	10	♂	N	N	10	♂	N	N
				4		10	♀	N	10	♂	N	N	10	♂	N	N	10	♂	N	N
				5		10	♀	N	10	♂	N	N	10	♂	N	N	10	♂	N	N
Area 1 comp /		100 %		1		10	♀	N	10	♂	N	N	10	♂	N	N	10	♂	N	N
				2		10	♀	N	10	♂	N	N	10	♂	N	N	10	♂	N	N
				3		10	♀	N	10	♂	N	N	10	♂	N	N	10	♂	N	N
				4		10	♀	N	10	♂	N	N	10	♂	N	N	10	♂	N	N
				5		10	♀	N	10	♂	N	N	10	♂	N	N	10	♂	N	N

① FB, MMB 12/21/08; obs. = 10 # Alive, N obs.

96 HOUR SUSPENDED PARTICULATE PHASE TEST DATA SHEET 3



CLIENT PND Engineers	PROJECT Douglas Harbor	NEWFIELDS JOB NO. 1414-001-860	PROJECT MANAGER Brian Hester
		NEWFIELDS LABORATORY Port Gamble / Bath	SPECIES Mysidopsis bahia
		PROTOCOL USEPA/USCOE 1998	

SURVIVAL & BEHAVIOR DATA

CLIENT/NEWFIELDS ID	CONC.		Day 1					Day 2					Day 3					Day 4				
	value	units	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	DATE	TECHNICIAN
Area 2 comp /			10	0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N	12/21/08	MMRB
				0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N		
		10 %		0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N		
				0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N		
				0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N		
Area 2 comp /			10	0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N	12/20/08	MMRB
				0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N		
		50 %		0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N		
				0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N		
				0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N		
Area 2 comp /			100	0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N	12/21/08	MMRB
				0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N		
		100 %		0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N		
				0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N		
				0	N	10	0	N	10	0	N	10	0	N	10	0	N	10	0	N		

96 HOUR SUSPENDED PARTICULATE PHASE TEST DATA SHEET 3



CLIENT PND Engineers	PROJECT Douglas Harbor	NEWFIELDS JOB NO. 1414-001-860	PROJECT MANAGER Brian Hester
SPECIES Mysidopsis bahia		NEWFIELDS LABORATORY Port Gamble / Bath	PROTOCOL USEPA/USCOE 1998

SURVIVAL & BEHAVIOR DATA

OBSERVATION KEY N = normal LOE= loss of equilibrium Q = quiescent DC = discoloration NB = no body F= Floating on Surface	Day 1					Day 2					Day 3					Day 4											
	CLIENT/ NEWFIELDS ID	CONC.		INITIAL NUMBER	#ALIVE	#DEAD	OBS	TECHNICIAN	DATE	#ALIVE	#DEAD	OBS	TECHNICIAN	DATE	#ALIVE	#DEAD	OBS	TECHNICIAN	DATE	#ALIVE	#DEAD	OBS	TECHNICIAN	DATE	#ALIVE	#DEAD	OBS
		value	units																								
Area 4a comp /	1			9	0	NB	f	12/18/08	9	0	N	MMB	12/19/08	9	0	N	MMB	12/20/08	9	0	N	MMB	12/21/08	9	0	N	MMB
	2			10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
	3	10 %		10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
	4			10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
	5			10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
Area 4a comp /	1			10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
	2			10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
	3	50 %		10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
	4			10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
	5			10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
Area 4a comp /	1			10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
	2			10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
	3	100 %		10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
	4			10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
	5			10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	

96 HOUR SUSPENDED PARTICULATE PHASE TEST DATA SHEET 3



CLIENT PND Engineers	PROJECT Douglas Harbor	NEWFIELDS JOB NO. 1414-001-860	PROJECT MANAGER Brian Hester	SPECIES Mysidopsis bahia
NEWFIELDS LABORATORY Port Gamble / Bath			PROTOCOL USEPAUSCOE 1998	

SURVIVAL & BEHAVIOR DATA

CLIENT/NEWFIELDS ID	CONC. value	REP	INITIAL NUMBER	Day 1			Day 2			Day 3			Day 4		
				#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS
				units	value		units	value		units	value		units	value	
Area 4b comp /	10 %	1		10	0	N	10	0	N	10	0	N	10	0	N
		2		10	0	N	10	0	N	10	0	N	10	0	N
		3		10	0	N	10	0	N	10	0	N	10	0	N
		4		10	0	N	10	0	N	10	0	N	10	0	N
		5		10	0	N	10	0	N	10	0	N	10	0	N
Area 4b comp /	50	1		10	0	N	10	0	N	10	0	N	10	0	N
		2		10	0	N	10	0	N	10	0	N	10	0	N
		3		10	0	N	10	0	N	10	0	N	10	0	N
		4		10	0	N	10	0	N	10	0	N	10	0	N
		5		10	0	N	10	0	N	10	0	N	10	0	N
Area 4b comp /	100	1		10	0	N	10	0	N	10	0	N	10	0	N
		2		10	0	N	10	0	N	10	0	N	10	0	N
		3		10	0	N	10	0	N	10	0	N	10	0	N
		4		10	0	N	10	0	N	10	0	N	10	0	N
		5		10	0	N	10	0	N	10	0	N	10	0	N

OBSERVATION KEY
 N = normal
 LOE = loss of equilibrium
 Q = quiescent
 DC = discoloration
 NB = no body
 F = Floating on Surface

INITIAL # OF ORGANISMS

96 HOUR SUSPENDED PARTICULATE PHASE TEST DATA SHEET 3



CLIENT PND Engineers	PROJECT Douglas Harbor	NEWFIELDS JOB NO. 1414-001-860	PROJECT MANAGER Brian Hester
SPECIES Mysidopsis bahia		NEWFIELDS LABORATORY Port Gamble / Bath	PROTOCOL USEPA/USCOE 1998

SURVIVAL & BEHAVIOR DATA

OBSERVATION KEY N = normal LOE= loss of equilibrium Q = quiescent DC = discoloration NB = no body F= Floating on Surface	CLIENT/ NEWFIELDS ID	CONC.		INITIAL NUMBER	Day 1				Day 2				Day 3				Day 4											
		value	units		REP	#ALIVE	#DEAD	OBS	TECHNICIAN	DATE	#ALIVE	#DEAD	OBS	TECHNICIAN	DATE	#ALIVE	#DEAD	OBS	TECHNICIAN	DATE	#ALIVE	#DEAD	OBS					
																								value	units			
					10	0	N	NMB	12/18/08	10	0	N	NMB	12/19/08	10	0	N	NMB	12/20/08	10	0	N	NMB	12/21/08	10	0	N	NMB
					10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
10 %					10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
					10	0	NB			10	0	N			10	0	N			10	0	N			10	0	N	
					10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
					10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
50					10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
					10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
					10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	
100					10	0	N			10	0	N			10	0	N			10	0	N			10	0	N	



96 HOUR SUSPENDED PARTICULATE
PHASE TEST
WATER QUALITY DATASHEET

CLIENT	PND Engineers	PROJECT	Douglas Harbor	SPECIES	<i>Mysidopsis bahia</i>	DILUTION WATER BATCH	FSW121608	TEST START DATE	17 Dec 08	TIME	1500
NEWFIELDS JOB NUMBER	1414-001-860	PROJECT MANAGER	Brian Hester	NEWFIELDS LABORATORY	Port Gamble Bath	PROTOCOL	USEPAUSCOE 1998 / NEWFIELDS B10067	TEST END DATE	21 Dec 08	TIME	1300

WATER QUALITY DATA

CLIENT/ NEWFIELDS ID	CONCENTRATION		DAY	REP	DO (mg/L)		TEMP. (C)		SALINITY (ppt)		pH		FEEDING		
	value	units			meter	mg/L	meter	°C	meter	ppt	meter	unit	am	pm	
Control /	0 %		0	All	3	7.6	3	20.3	3	25	3	7.3	X	MNB	
Control /	0 %		1	1	3	6.1	3	19.4	3	26	3	7.7	BH	CR	
Control /	0 %		2	2	3	6.8	3	19.0	3	26	3	7.8	MNB	MNB	
Control /	0 %		3	3	3	5.3	3	19.5	3	26	3	7.7	BH	BH	
Control /	0 %		4	1	3	6.1	3	19.5	3	27	3	7.3	MNB	MNB	X
				2	3	5.6	3	19.6	3	26	3	7.4			
				3	3	5.2	3	19.6	3	26	3	7.4			
				4	3	5.7	3	19.6	3	26	3	7.5			
				5	3	5.9	3	19.7	3	27	3	7.6			
Site Water /	0 %		0	All	3	8.7	3	20.0	3	24	3	7.4	X	MNB	
Site Water /	0 %		1	1	3	6.5	3	19.5	3	24	3	7.8	BH	CR	
Site Water /	0 %		2	2	3	6.9	3	19.2	3	25	3	7.9	MNB	MNB	
Site Water /	0 %		3	3	3	5.3	3	19.4	3	25	3	7.7	BH	BH	
Site Water /	0 %		4	1	3	5.9	3	19.6	3	26	3	7.7	MNB	MNB	X
				2	3	5.8	3	19.6	3	25	3	7.7			
				3	3	5.5	3	19.6	3	25	3	7.7			
				4	3	5.4	3	19.6	3	25	3	7.7			
				5	3	5.9	3	19.6	3	25	3	7.7			



96 HOUR SUSPENDED PARTICULATE
PHASE TEST
WATER QUALITY DATASHEET

CLIENT PND Engineers NEWFIELDS JOB NUMBER 1414-001-860	PROJECT Douglas Harbor PROJECT MANAGER Brian Hester	SPECIES <i>Mysidopsis bahia</i> NEWFIELDS LABORATORY Port Gamble Bath	DILUTION WATER BATCH FSW121608	TEST START DATE 1746Dec08	TIME
PROTOCOL USEPAUSCOE 1998 / NEWFIELDS BIO067				TEST END DATE 2126Dec08	TIME

WATER QUALITY DATA

CLIENT/ NEWFIELDS ID	TEST CONDITIONS		CONCENTRATION value units	DAY	REP	DO (mg/L) > 3.7 D.O.		TEMP. (C) 20 ± 2 TEMP.		SALINITY (ppt) 25 ± 2 SALINITY		pH 7.8 ± 0.5 pH		Tech	FEEDING	
	meter	mg/L				meter	°C	meter	ppt	meter	unit	am	pm			
Area 1 comp /	10 %		0	All	3	7.7	3	20.3	3	25	3	7.4	f	X	M.B	
Area 1 comp /	10 %		1	1	3	6.3	3	20.2	3	25	3	7.8	f	B.H	C.R	
Area 1 comp /	10 %		2	2	3	6.8	3	19.2	3	26	3	7.9	f	M.M.B	M.M.B	
Area 1 comp /	10 %		3	3	3	5.5	3	19.4	3	26	3	7.7	f	M.M.B	B.H	
Area 1 comp /	10 %		4	1	3	5.2	3	19.7	3	26	3	7.7	f	M.M.B	X	
				2	3	5.2	3	19.6	3	26	3	7.6	f			
				3	3	4.9	3	19.6	3	26	3	7.6	f			
				4	3	5.8	3	19.6	3	26	3	7.6	f			
				5	3	5.3	3	19.6	3	26	3	7.7	f			
Area 1 comp /	50 %		0	All	3	7.5	3	20.3	3	25	3	7.4	f	X	M.B	
Area 1 comp /	50 %		1	1	3	6.3	3	20.5	3	25	3	7.8	f	B.H	C.R	
Area 1 comp /	50 %		2	2	3	6.7	3	19.1	3	26	3	7.9	f	M.M.B	M.M.B	
Area 1 comp /	50 %		3	3	3	5.2	3	19.4	3	26	3	7.8	f	M.M.B	B.H	
Area 1 comp /	50 %		4	1	3	5.5	3	19.7	3	26	3	7.8	f	M.M.B	X	
				2	3	4.9	3	19.6	3	26	3	7.8	f			
				3	3	5.2	3	19.6	3	26	3	7.8	f			
				4	3	5.2	3	19.6	3	26	3	7.8	f			
				5	3	5.3	3	19.6	3	26	3	7.8	f			
Area 1 comp /	100 %		0	All	3	7.0	3	20.2	3	24	3	7.4	f	X	M.B	
Area 1 comp /	100 %		1	1	3	5.7	3	19.8	3	25	3	7.9	f	B.H	C.R	
Area 1 comp /	100 %		2	2	3	6.3	3	19.2	3	25	3	8.0	f	M.M.B	M.M.B	
Area 1 comp /	100 %		3	3	3	4.8	3	19.5	3	25	3	7.9	f	M.M.B	B.H	
Area 1 comp /	100 %		4	1	3	5.6	3	19.7	3	25	3	8.0	f	M.M.B	X	
				2	3	4.9	3	19.7	3	25	3	7.9	f			
				3	3	4.6	3	19.6	3	25	3	7.9	f			
				4	3	4.7	3	19.6	3	25	3	7.9	f			
				5	3	5.4	3	19.6	3	25	3	8.0	f			

**96 HOUR SUSPENDED PARTICULATE
PHASE TEST
WATER QUALITY DATASHEET**



CLIENT PND Engineers NEWFIELDS JOB NUMBER 1414-001-860	PROJECT Douglas Harbor PROJECT MANAGER Brian Hester	SPECIES <i>Mysidopsis bahia</i> NEWFIELDS LABORATORY Port Gamble Bath	DILUTION WATER BATCH FSW121608 PROTOCOL USEPA/USCOE 1998 / NEWFIELDS BIC067	TEST START DATE 17 16 Dec08 TEST END DATE 21 20Dec08	TIME
---	--	--	--	--	------

WATER QUALITY DATA

CLIENT / NEWFIELDS ID	TEST CONDITIONS		CONCENTRATION value units	DAY	REP	DO (mg/L)		TEMP (°C)		SALINITY (ppt)		pH		Tech	FEEDING	
	D.O.					TEMP		SALINITY		pH		am	pm			
	meter	mg/L				meter	°C	meter	ppt	meter	unit					
Area 2 comp /	10 %		All	0	All	3	7.5	3	20.6	3	25	3	7.5	J	X	MB
Area 2 comp /	10 %		1	1	1	3	6.1	3	20.7	3	25	3	7.8	J	BH	CR
Area 2 comp /	10 %		2	2	2	3	6.5	3	19.2	3	26	3	8.0	J	MWB	MWB
Area 2 comp /	10 %		3	3	3	3	5.0	3	19.5	3	26	3	7.7	BH	MWB	BH
Area 2 comp /	10 %		1	1	1	3	5.6	3	19.7	3	26	3	7.8	MWB	MWB	X
			2	2	2	3	4.9	3	19.7	3	26	3	7.7			
			3	3	3	3	4.9	3	19.6	3	26	3	7.7			
			4	4	4	3	5.4	3	19.6	3	26	3	7.7			
			5	5	5	3	5.3	3	19.6	3	26	3	7.7			
Area 2 comp /	50 %		All	0	All	3	7.6	3	20.5	3	25	3	7.6	J	X	MB
Area 2 comp /	50 %		1	1	1	3	6.1	3	20.5	3	25	3	7.8	J	BH	CR
Area 2 comp /	50 %		2	2	2	3	6.6	3	19.2	3	25	3	8.0	J	MWB	MWB
Area 2 comp /	50 %		3	3	3	3	5.1	3	19.4	3	26	3	7.0	BH	MWB	BH
Area 2 comp /	50 %		1	1	1	3	5.4	3	19.7	3	26	3	7.8	MWB	MWB	X
			2	2	2	3	5.2	3	19.7	3	26	3	7.8			
			3	3	3	3	5.3	3	19.6	3	26	3	7.8			
			4	4	4	3	5.2	3	19.6	3	26	3	7.8			
			5	5	5	3	5.5	3	19.6	3	26	3	7.8			
Area 2 comp /	100 %		All	0	All	3	5.5	3	20.1	3	24	3	7.9	J	X	MB
Area 2 comp /	100 %		1	1	1	3	6.1	3	21.2	3	25	3	7.9	J	BH	CR
Area 2 comp /	100 %		2	2	2	3	6.5	3	19.2	3	25	3	8.1	J	MWB	MWB
Area 2 comp /	100 %		3	3	3	3	5.0	3	19.6	3	25	3	7.9	BH	MWB	BH
Area 2 comp /	100 %		1	1	1	3	4.8	3	19.7	3	25	3	7.9	MWB	MWB	X
			2	2	2	3	4.9	3	19.7	3	25	3	7.9			
			3	3	3	3	5.3	3	19.6	3	25	3	7.9			
			4	4	4	3	5.0	3	19.6	3	25	3	7.9			
			5	5	5	3	5.4	3	19.6	3	25	3	8.0			



96 HOUR SUSPENDED PARTICULATE
PHASE TEST
WATER QUALITY DATASHEET

CLIENT PND Engineers NEWFIELDS JOB NUMBER 1414-001-860	PROJECT Douglas Harbor PROJECT MANAGER Brian Hester	SPECIES <i>Mysidopsis bahia</i> NEWFIELDS LABORATORY Port Gamble Bath	DILUTION WATER BATCH FSW121608	TEST START DATE 17 Dec 08	TIME
PROTOCOL USEPA/USCOE 1998 / NEWFIELDS BIO067		TEST END DATE 21 Dec 08		TIME	

WATER QUALITY DATA

CLIENT/ NEWFIELDS ID	CONCENTRATION		DAY	REP	DO (mg/L)		TEMP. (C)		SALINITY (ppt)		pH		Tech	FEEDING	
	value	units			D.O.	mg/L	meter	°C	meter	ppt	meter	unit		am	pm
Area 4a comp /	10 %		0	All	3	7.4	3	20.9	3	25	3	7.7	f	X	MB
Area 4a comp /	10 %		1	1	3	6.2	3	21.1	3	25	3	7.8	f	BH	CR
Area 4a comp /	10 %		2	2	3	6.7	3	19.3	3	26	3	8.0	w	MMB	MMMB
Area 4a comp /	10 %		3	3	3	5.2	3	19.2	3	26	3	7.7	BH	MMB	BA
Area 4a comp /	10 %		4	1	3	5.2	3	19.7	3	26	3	7.8	MMB	MMB	X
			2	3	5.5	3	19.6	3	26	3	7.8	↓	↓		
			3	3	5.2	3	19.6	3	26	3	7.8	↓	↓		
			4	3	5.6	3	19.6	3	26	3	7.7	↓	↓		
			5	3	5.6	3	19.6	3	26	3	7.8	↓	↓		
Area 4a comp /	50 %		0	All	3	7.3	3	20.7	3	25	3	7.7	f	X	MB
Area 4a comp /	50 %		1	1	3	6.3	3	20.5	3	25	3	7.8	w	BH	CR
Area 4a comp /	50 %		2	2	3	6.7	3	19.5	3	26	3	8.0	w	MMB	MMMB
Area 4a comp /	50 %		3	3	3	5.5	3	19.2	3	26	3	7.8	BH	MMB	BA
Area 4a comp /	50 %		4	1	3	5.3	3	19.6	3	26	3	7.8	MMB	MMB	X
			2	3	5.5	3	19.6	3	26	3	7.8	↓	↓		
			3	3	5.4	3	19.6	3	26	3	7.9	↓	↓		
			4	3	5.4	3	19.6	3	26	3	7.9	↓	↓		
			5	3	5.2	3	19.6	3	26	3	7.8	↓	↓		
Area 4a comp /	100 %		0	All	3	6.8	3	20.4	3	24	3	7.8	f	X	MB
Area 4a comp /	100 %		1	1	3	5.3	3	20.6	3	24	3	7.9	w	BH	CR
Area 4a comp /	100 %		2	2	3	6.4	3	19.4	3	25	3	8.1	w	MMB	MMMB
Area 4a comp /	100 %		3	3	3	5.3	3	19.4	3	25	3	8.0	BH	MMB	BA
Area 4a comp /	100 %		4	1	3	5.4	3	19.7	3	25	3	8.0	MMB	MMB	X
			2	3	5.5	3	19.7	3	25	3	8.0	↓	↓		
			3	3	5.4	3	19.6	3	25	3	8.0	↓	↓		
			4	3	5.4	3	19.6	3	25	3	8.0	↓	↓		
			5	3	5.6	3	19.6	3	26	3	8.0	↓	↓		

96 HOUR SUSPENDED PARTICULATE
PHASE TEST
WATER QUALITY DATASHEET

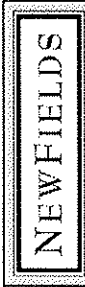


CLIENT PND Engineers NEWFIELDS JOB NUMBER 1414-001-860	PROJECT Douglas Harbor PROJECT MANAGER Brian Hester	SPECIES <i>Mysidopsis bahia</i> NEWFIELDS LABORATORY Port Gamble Bath	DILUTION WATER BATCH FSW121608 PROTOCOL USEPA/USCOE 1998 / NEWFIELDS BIO067	TEST START DATE 17 Dec 08	TIME
				TEST END DATE 21 Dec 08	TIME

WATER QUALITY DATA

CLIENT/ NEWFIELDS ID	CONCENTRATION value units	DAY	REP	DO (mg/L)		TEMP. (C)		SALINITY (ppt)		pH		Tech	FEEDING	
				meter	D.O.	meter	TEMP.	meter	ppt	meter	unit		am	pm
Area 4b comp /	10 %	0	All	3	7.4	3	20.4	3	25	3	7.7	J	X	MB
Area 4b comp /	10 %	1	1	3	6.4	3	20.1	3	25	3	7.8	J	BH	CR
Area 4b comp /	10 %	2	2	3	6.4	3	19.3	3	26	3	8.0	J	MWB	MWB
Area 4b comp /	10 %	3	3	3	5.1	3	19.4	3	26	3	7.8	BH	MWB	BH
Area 4b comp /	10 %	4	1	3	5.5	3	19.7	3	26	3	7.9	MWB	MWB	X
			2	3	5.1	3	19.7	3	26	3	7.8	J	J	J
			3	3	5.2	3	19.6	3	26	3	7.8	J	J	J
			4	3	5.2	3	19.6	3	26	3	7.8	J	J	J
			5	3	5.5	3	19.6	3	26	3	7.8	J	J	J
Area 4b comp /	50 %	0	All	3	7.5	3	20.7	3	25	3	7.7	J	X	MB
Area 4b comp /	50 %	1	1	3	6.3	3	19.8	3	25	3	7.8	J	BH	CR
Area 4b comp /	50 %	2	2	3	6.6	3	19.3	3	26	3	8.0	J	MWB	MWB
Area 4b comp /	50 %	3	3	3	4.9	3	19.4	3	26	3	7.8	BH	MWB	BH
Area 4b comp /	50 %	4	1	3	5.8	3	19.7	3	26	3	7.8	MWB	MWB	X
			2	3	5.5	3	19.7	3	26	3	7.9	J	J	J
			3	3	5.6	3	19.7	3	26	3	7.9	J	J	J
			4	3	4.7	3	19.6	3	26	3	7.9	J	J	J
			5	3	4.9	3	19.6	3	26	3	7.9	J	J	J
Area 4b comp /	100 %	0	All	3	7.4	3	20.5	3	25	3	7.8	J	X	MB
Area 4b comp /	100 %	1	1	3	4.7	3	20.3	3	25	3	7.9	J	BH	CR
Area 4b comp /	100 %	2	2	3	6.4	3	19.2	3	25	3	8.1	J	MWB	MWB
Area 4b comp /	100 %	3	3	3	4.8	3	19.4	3	26	3	8.0	BH	MWB	BH
Area 4b comp /	100 %	4	1	3	5.2	3	19.7	3	26	3	8.0	MWB	MWB	X
			2	3	5.5	3	19.7	3	26	3	8.1	J	J	J
			3	3	5.3	3	19.7	3	26	3	8.1	J	J	J
			4	3	5.2	3	19.6	3	26	3	8.1	J	J	J
			5	3	4.9	3	19.6	3	26	3	8.1	J	J	J

96 HOUR SUSPENDED PARTICULATE
PHASE TEST
WATER QUALITY DATASHEET



CLIENT PND Engineers NEWFIELDS JOB NUMBER 1414-001-860	PROJECT Douglas Harbor PROJECT MANAGER Brian Hester	SPECIES <i>Mysidopsis bahia</i> NEWFIELDS LABORATORY Port Gamble Bath	DILUTION WATER BATCH FSW121608 PROTOCOL USEPA/USCOE 1988 / NEWFIELDS BIO067	TEST START DATE 17 16Dec08 TEST END DATE 21 20Dec08	TIME
---	--	--	--	--	------

WATER QUALITY DATA

CLIENT/ NEWFIELDS ID	CONCENTRATION value units	DAY	REP	DO (mg/L)		TEMP. (C)		SALINITY (ppt)		pH		Date	Tech	FEEDING	
				meter	mg/L	meter	°C	meter	ppt	meter	unit			am	pm
Lower Comp /	10 %	0	All	3	7.4	3	20.4	2	25	3	7.4	12/17	J	X	M/B
Lower Comp /	10 %	1	1	3	6.2	3	20.0	3	25	3	7.8	12/18	J	BH	CR
Lower Comp /	10 %	2	2	3	6.5	3	19.3	3	25	3	8.0	12/19	J	M/M/B	M/M/B
Lower Comp /	10 %	3	3	3	5.2	3	19.4	3	26	3	7.8	12/20	BH	M/M/B	B/A
Lower Comp /	10 %	4	1	3	5.2	3	19.7	3	26	3	7.9	12/21	M/M/B	M/M/B	X
			2	3	5.2	3	19.7	3	26	3	7.8				
			3	3	5.2	3	19.4	3	26	3	26	3	7.9		
			4	3	5.2	3	19.6	3	26	3	26	3	7.7		
			5	3	5.2	3	19.6	3	26	3	26	3	7.7		
Lower Comp /	50 %	0	All	3	7.7	3	20.3	3	25	3	7.5	12/17	J	X	M/B
Lower Comp /	50 %	1	1	3	6.4	3	20.2	3	25	3	7.8	12/18	J	BH	CR
Lower Comp /	50 %	2	2	3	6.7	3	19.3	3	26	3	8.0	12/19	J	M/M/B	M/M/B
Lower Comp /	50 %	3	3	3	5.6	3	19.3	3	26	3	7.8	12/20	BH	M/M/B	B/A
Lower Comp /	50 %	4	1	3	5.2	3	19.6	3	26	3	7.7	12/21	M/M/B	M/M/B	X
			2	3	5.4	3	19.6	3	26	3	7.7				
			3	3	5.4	3	19.6	3	26	3	26	3	7.8		
			4	3	5.4	3	19.6	3	26	3	26	3	7.8		
			5	3	5.0	3	19.6	3	26	3	26	3	7.7		
Lower Comp /	100 %	0	All	3	7.8	3	20.1	3	24	3	7.6	12/17	J	X	M/B
Lower Comp /	100 %	1	1	3	6.6	3	20.0	3	24	3	7.8	12/18	J	BH	CR
Lower Comp /	100 %	2	2	3	6.7	3	19.2	3	25	3	8.0	12/19	J	M/M/B	M/M/B
Lower Comp /	100 %	3	3	3	5.4	3	19.3	3	25	3	7.8	12/20	BH	M/M/B	B/A
Lower Comp /	100 %	4	1	3	5.6	3	19.7	3	25	3	7.8	12/21	M/M/B	M/M/B	X
			2	3	5.4	3	19.6	3	25	3	7.8				
			3	3	5.5	3	19.6	3	25	3	25	3	7.8		
			4	3	5.6	3	19.6	3	25	3	25	3	7.8		
			5	3	5.6	3	19.6	3	25	3	25	3	7.8		



Ammonia Analysis Total Ammonia (mg/L)

Client/Project: <i>FND / Douglas Harbor</i>	Organism: <i>Mysid</i>	NewFields Test ID:	Test Duration (days): <i>4</i>
--	---------------------------	--------------------	-----------------------------------

PRETEST / **(INITIAL)** / FINAL / OTHER (circle one) DAY of TEST: 0
(OVERLYING (OV) / POREWATER (PW) (circle one)

Calibration Standards Temperature		Sample temperature should be within $\pm 1^{\circ}\text{C}$ of standards temperature at time and date of analysis.
Date:	Temperature:	
<i>12/17/08</i>	<i>20.0</i>	

Sample ID or Description	Conc. or Rep	Date of Sampling and Initials	Ammonia Value (mg/L)	Temp °C	Date of Reading and Initials	Sample Preserved (Y/N)	pH	Sal (ppt)	Sulf. mg/L
<i>Control</i>		<i>12/17/08 ↓</i>	<i>0.00</i>	<i>19.5</i>	<i>12/17/08 ↓</i>	<i>N</i>	<i>NA</i>	<i>NA</i>	<i>0.000</i>
<i>Area 1</i>	<i>10</i>	↓	<i>0.00</i>	<i>19.5</i>	↓	↓	↓	↓	<i>0.005</i>
<i>Area 1</i>	<i>50</i>		<i>1.20</i>	<i>19.0</i>					<i>0.022</i>
<i>Area 1</i>	<i>100</i>		<i>2.70</i>	<i>19.0</i>					<i>0.033</i>
<i>Area 2</i>	<i>10</i>		<i>0.0208</i>	<i>19.5</i>					<i>0.004</i>
<i>Area 2</i>	<i>50</i>		<i>0.903</i>	<i>19.0</i>					<i>0.012</i>
<i>Area 2</i>	<i>100</i>		<i>2.21</i>	<i>19.5</i>					<i>0.025</i>
<i>Area 4a</i>	<i>10</i>		<i>0.00</i>	<i>19.5</i>					<i>0.005</i>
<i>Area 4a</i>	<i>50</i>		<i>1.17</i>	<i>19.5</i>					<i>0.012</i>
<i>Area 4a</i>	<i>100</i>		<i>2.59</i>	<i>19.5</i>					<i>0.024</i>
<i>Area 4b</i>	<i>10</i>		<i>0.125</i>	<i>19.5</i>					<i>0.008</i>
<i>Area 4b</i>	<i>50</i>		<i>1.78</i>	<i>19.5</i>					<i>0.020</i>
<i>Area 4b</i>	<i>100</i>		<i>3.90</i>	<i>19.5</i>					<i>0.031</i>
<i>Lower Comp</i>	<i>10</i>		<i>0.00</i>	<i>19.5</i>					<i>0.007</i>
<i>Lower Comp</i>	<i>50</i>		<i>0.00</i>	<i>19.5</i>					<i>0.023</i>
<i>Lower Comp</i>	<i>100</i>		<i>0.296</i>	<i>19.5</i>					<i>0.040</i>

Site water 12/17/08 ↓ 0.00 19.0 12/17/08 ↓ N NA NA 0.007



Ammonia Analysis Total Ammonia (mg/L)

Client/Project: PND / Juneau Douglas Harbor	Organism: Mysids	NewFields Test ID:	Test Duration (days):
--	----------------------------	---------------------------	------------------------------

PRETEST / INITIAL / FINAL / OTHER (circle one) DAY of TEST: _____
 OVERLYING (OV) / POREWATER (PW) (circle one)

Calibration Standards Temperature		Sample temperature should be within $\pm 1^{\circ}\text{C}$ of standards temperature at time and date of analysis.
Date:	Temperature:	
22 Dec. '08	19.0	

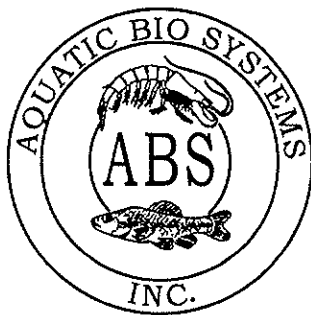
Sample ID or Description	Conc. or Rep	Date of Sampling and Initials	Ammonia Value (mg/L)	Temp °C	Date of Reading and Initials	Sample Preserved (Y/N)	pH	Sal (ppt)	Sulf. mg/L
Ø	Swon	12/21/08 MMB	1.92	18.5	12/22/08 MMB	Y			
Site Water			1.91						
Area 1 10%			2.32						
↓ 50%			3.46						
↓ 100%			4.76						
Area 2 10%			1.49						
↓ 50%			2.57						
↓ 100%			3.52						
Area 4A 10%			1.51						
↓ 50%			3.19						
↓ 100%			8.14						
Area 4B 10%			3.95						
↓ 50%			11.2						
↓ 100%			20.5						
LC 10%			5.47						
↓ 50%			5.97						
↓ 100%			11.4						



ORGANISM RECEIPT LOG

Date: 12/16/08		Time: 1430		NewFields Batch No. ABS	
Organism: Mysid			Source: Aquatic BioSystems		
Address: On File				Invoice Attached <input checked="" type="radio"/> Yes <input type="radio"/> No	
Phone: On File		Contact: Scott Kellman			
No. Ordered: 1300		No. Received: 1430		Source Batch: 12/12/08 hatch	
Condition of Organisms: Good			Approximate Size or Age: 4 day		
Shipper: FedEx			B of L (Tracking No.)		
Condition of Container: Good			Received By: BH		
Confirmation of ID of Organism: Yes <input checked="" type="radio"/> No				Technician (Initials): BH	
Notes:					
pH (Units)	Temp. (°C)	D.O. (mg/L)	Conductivity or Salinity (Include Units)		Technician (Initials)
7.0	14.2	15.8	25		BH/JW
Notes:					

1300 Blue Spruce Drive, Suite C
Fort Collins, Colorado 80524



Toll Free: 800/331-5916
Tel: 970/484-5091 Fax: 970/484-2514

ORGANISM HISTORY

DATE: 12/15/08

SPECIES: Americamysis bahia (formerly Mysidopsis)

AGE: 3 day

LIFE STAGE: Juvenile

HATCH DATE: 12/12/08

BEGAN FEEDING: Immediately

FOOD: Artemia sp.

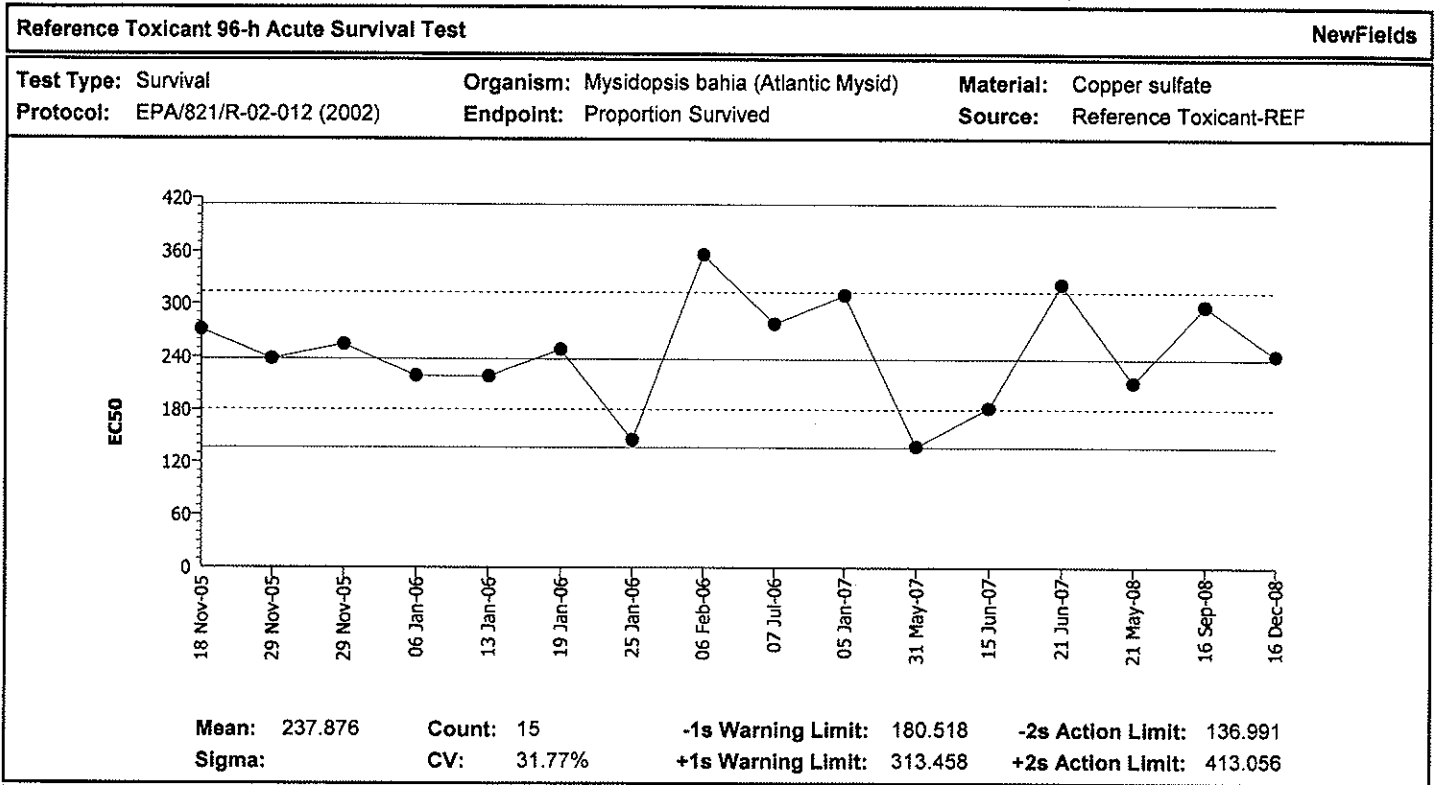
Water Chemistry Record:

	Current	Range
TEMPERATURE:	<u>24°C</u>	<u>23-25°C</u>
SALINITY/CONDUCTIVITY:	<u>25 ppt</u>	<u>21-30 ppt</u>
TOTAL HARDNESS (as CaCO ₃):	<u>--</u>	<u>--</u>
TOTAL ALKALINITY (as CaCO ₃):	<u>154 mg/l</u>	<u>110-215 mg/l</u>
pH:	<u>7.92</u>	<u>7.44-8.26</u>

Comments:

Facility Supervisor

CETIS QC Chart



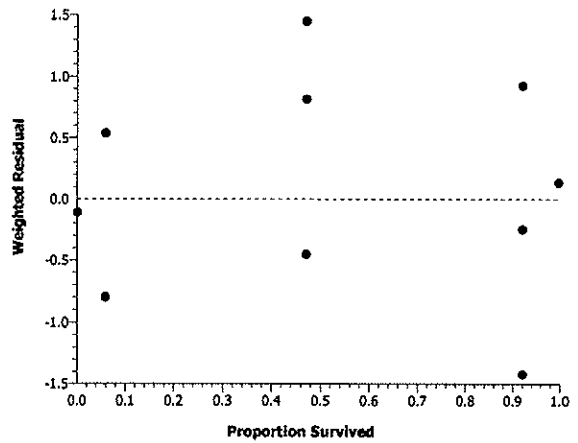
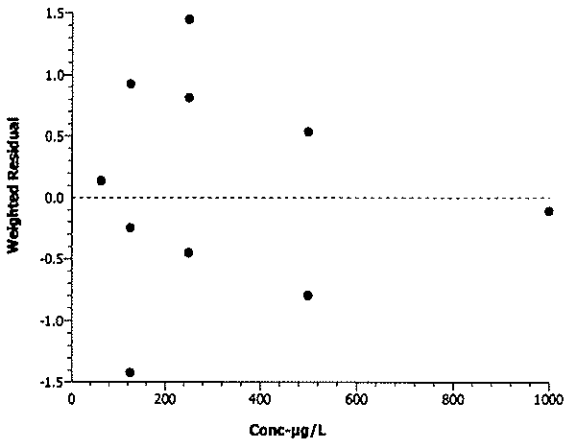
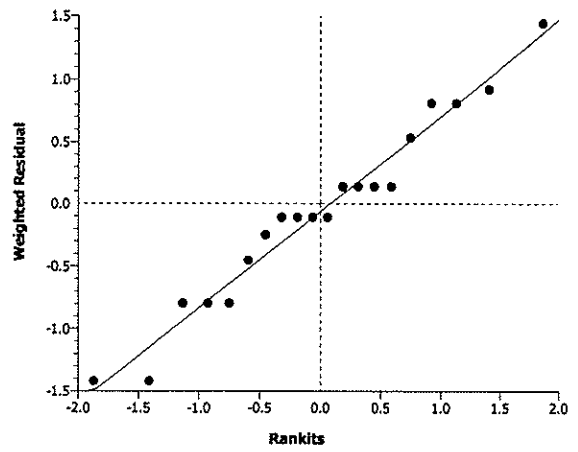
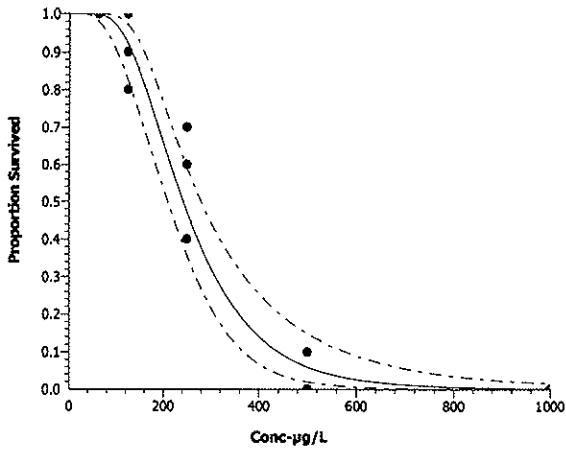
Quality Control Data										
Point	Year	Month	Day	Data	Delta	Sigma	Warning	Action	Test Link	Analysis
1	2005	Nov	18	270.9431	33.06737	0.47174			04-9207-2519	06-7062-9566
2			29	237.8382	-0.03753	-0.00057			13-3749-4170	12-0215-0194
3			29	254.1857	16.30997	0.24035			14-4179-4943	15-0893-7739
4	2006	Jan	6	218.4655	-19.4102	-0.30850			04-0317-1797	12-3195-9925
5			13	217.9948	-19.8809	-0.31632			16-1881-1237	12-7567-2246
6			19	248.7937	10.91797	0.16264			08-0452-0770	17-2979-4106
7			25	145.5691	-92.3066	-1.77987	(-)		11-3116-1669	06-2279-5163
8		Feb	6	356.1905	118.3147	1.46318	(+)		10-1630-9590	13-6331-1854
9		Jul	7	278.1486	40.27287	0.56686			02-9682-5563	11-9863-7491
10	2007	Jan	5	310.4012	72.52547	0.96448			10-8470-2803	06-4877-5470
11		May	31	137.8252	-100.050	-1.97799	(-)		10-1324-7704	03-5962-2699
12		Jun	15	181.7338	-56.1419	-0.97567			08-4148-7978	10-6333-9348
13			21	322.6705	84.79477	1.10498	(+)		00-4869-4501	07-4507-6179
14	2008	May	21	211.1782	-26.6976	-0.43146			17-4827-0455	10-0698-3422
15		Sep	16	297.9535	60.07777	0.81615			07-0996-4754	04-2869-2915
16		Dec	16	241.8133	3.93757	0.05950			03-2797-2997	02-1235-2262

CETIS Analysis Detail

Reference Toxicant 96-h Acute Survival Test							NewFields		
Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version				
Proportion Survived	Linear Regression	03-2797-2997	03-2797-2997	15 Jan-09 9:11 AM	CETISv1.1.2				
Linear Regression Options									
Model Function	Threshold Option	Threshold	Threshold Opt	Reweighted	Pooled Groups	Het Corr			
Log-Normal [NED=A+B*log(X)]	Control Threshold	0	Yes	Yes	No	No			
Regression Summary									
Iters	Log Likelihood	Mu	Sigma	G	Chi-Sq	Critical	P-Value	Decision(0.05)	
6	-49.05508	-1.36958	0.20278	0.06458	10.90709	28.86930	0.89826	Non-Significant Heterogeneity	
Point Estimates									
% Effect	Conc-µg/L	95% LCL	95% UCL						
10	132.925	103.2089	157.621						
15	149.0431	119.3341	174.1166						
20	163.236	133.6805	188.7991						
25	176.4846	147.1012	202.7278						
40	214.8356	185.3616	244.9633						
50	241.8133	211.1399	276.944						
Regression Parameters									
Parameter	Estimate	Std Error	95% LCL	95% UCL	t Statistic	P-Value	Decision(0.05)		
Slope	4.931444	0.6394054	3.678209	6.184679	7.713	0.00000	Significant		
Intercept	-6.753998	1.530728	-9.754226	-3.753771	-4.412	0.00034	Significant		
Residual Analysis									
Attribute	Method	Statistic	Critical	P-Value	Decision(0.05)				
Variances	Modified Levene	2.340868	3.05557	0.10215	Equal Variances				
Distribution	Shapiro-Wilk W	0.9652033		0.65210	Normal Distribution				
Data Summary									
Conc-µg/L	Control Type	Count	Calculated Variate(A/B)						
			Mean	Minimum	Maximum	SE	SD	A	B
0	Dilution Water	4	1.00000	1.00000	1.00000	0.00000	0.00000	40	40
62.5		4	1.00000	1.00000	1.00000	0.00000	0.00000	40	40
125		4	0.87500	0.80000	1.00000	0.01954	0.09574	35	40
250		4	0.57500	0.40000	0.70000	0.02569	0.12583	23	40
500		4	0.02500	0.00000	0.10000	0.01021	0.05000	1	40
1000		4	0.00000	0.00000	0.00000	0.00000	0.00000	0	40

CETIS Analysis Detail

Graphics



CETIS Analysis Detail

Reference Toxicant 96-h Acute Survival Test NewFields

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
Proportion Survived	Comparison	03-2797-2997	03-2797-2997	15 Jan-09 9:10 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Dunnett's Multiple Comparison	C > T	Angular (Corrected)		62.5	125	1.6	88.3884	9.62%

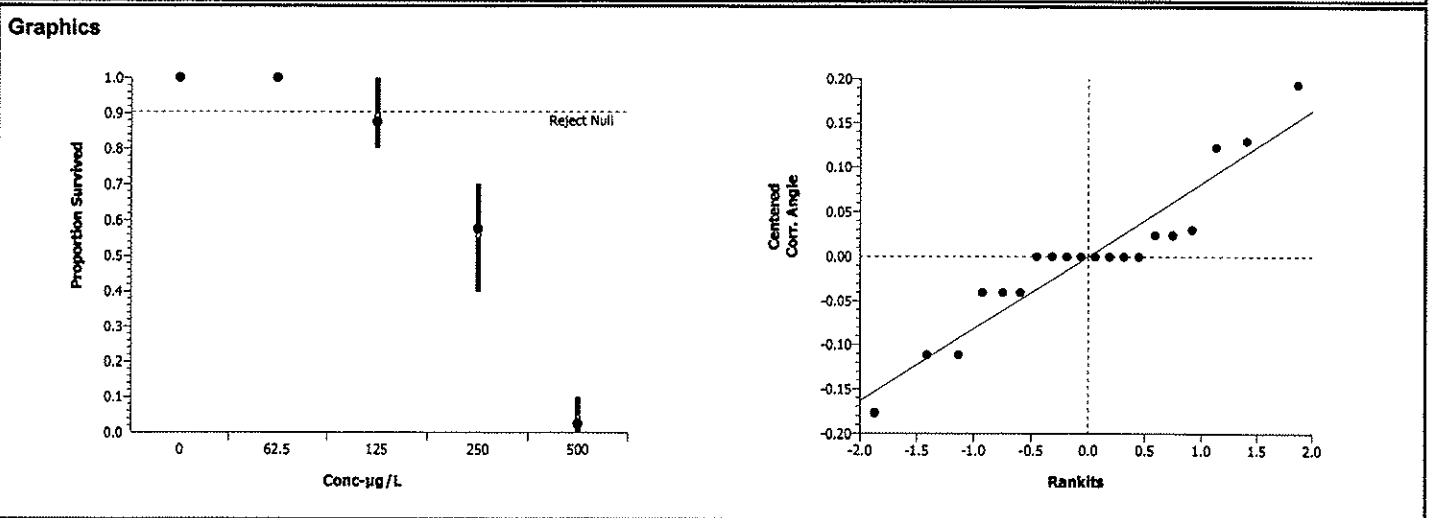
Control	vs	Conc-µg/L	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Water		62.5	0	2.35615	0.8000	0.15651	Non-Significant Effect
		125	2.90819	2.35615	0.0177	0.15651	Significant Effect
		250	8.28015	2.35615	0.0000	0.15651	Significant Effect
		500	18.2536	2.35615	0.0000	0.15651	Significant Effect

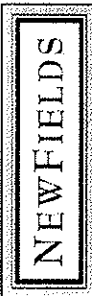
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	4.180124	1.045031	4	118.42	0.00000	Significant Effect
Error	0.1323681	0.0088245	15			
Total	4.31249239	1.0538556	19			

Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Modified Levene	2.09972	4.89321	0.13152	Equal Variances
Distribution	Shapiro-Wilk W	0.90979		0.06315	Normal Distribution

Conc-µg/L	Control Type	Count	Original Data				Transformed Data			
			Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Water	4	1.00000	1.00000	1.00000	0.00000	1.41202	1.41202	1.41202	0.00027
62.5		4	1.00000	1.00000	1.00000	0.00000	1.41202	1.41202	1.41202	0.00027
125		4	0.87500	0.80000	1.00000	0.09574	1.21884	1.10715	1.41202	0.14512
250		4	0.57500	0.40000	0.70000	0.12583	0.86201	0.68472	0.99116	0.12815
500		4	0.02500	0.00000	0.10000	0.05000	0.19952	0.15878	0.32175	0.08149

Conc-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	1.00000	1.00000	1.00000	1.00000						
62.5		1.00000	1.00000	1.00000	1.00000						
125		1.00000	0.80000	0.80000	0.90000						
250		0.60000	0.40000	0.60000	0.70000						
500		0.00000	0.00000	0.10000	0.00000						





Reference Toxicant Test Water Quality Datasheet

PO70930.93

CLIENT PND Engineers	PROJECT Douglas Harbor	SPECIES <i>Mysidopsis bahia</i>	PROTOCOL Port Gamble / Bath
NEWFIELDS JOB NUMBER 1414-001-860	PROJECT MANAGER Brian Hester	QUANTITY OF STOCK TARGET: 3.93 mL	QUANTITY OF DILUENT TARGET: 2000 mL
NEWFIELDS LABORATORY Port Gamble / Bath	DILUTION WATER BATCH FSW121608	QUANTITY OF STOCK ACTUAL: 3.93708	QUANTITY OF DILUENT ACTUAL: 2000.0
TEST START DATE 16Dec08		TIME 1400	
TEST END DATE 20Dec08		TIME 1300	
INITIAL & DATE TS12/16/08		PROTOCOL USEPAUSCOE 1988 / NEWFIELDS B10067	

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	CONCENTRATION value	units	DAY	REP	DO (mg/L)		TEMP. (°C)		SALINITY (ppt)		pH		Date	Tech	FEEDING
					meter	D.O.	meter	TEMP.	meter	ppt	meter	unit			
Ref.Tox.-copper	0	mg/L	0	All	3	7.8	3	20.7	3	25	3	7.6	12/17	JL	X MB
			1	1	3	6.1	3	19.9	3	25	3	7.7	12/18	JL	BH CR
			2	2	3	6.5	3	19.2	3	25	3	7.5	12/19	JL	MB MMB
			3	3	3	5.5	3	19.3	3	26	3	7.6	12/20	BH	MMB BH
			4	4	3	5.1	3	19.6	3	26	3	7.6	12/21	MMB	MMB X
Ref.Tox.-copper	62.5	mg/L	0	All	3	9.2	3	20.7	3	25	3	7.6	12/17	JL	X MB
			1	1	3	6.5	3	19.7	3	26	3	7.7	12/18	JL	BH CR
			2	2	3	6.4	3	19.2	3	26	3	7.7	12/19	JL	MB MMB
			3	3	3	5.6	3	19.3	3	26	3	7.7	12/20	BH	MMB BH
			4	4	3	5.2	3	19.6	3	26	3	7.6	12/21	MMB	MMB X
Ref.Tox.-copper	125	mg/L	0	All	3	8.2	3	20.8	3	25	3	7.6	12/17	JL	X MB
			1	1	3	6.7	3	19.6	3	26	3	7.7	12/18	JL	BH CR
			2	2	3	6.5	3	19.1	3	26	3	7.5	12/19	JL	MB MMB
			3	3	3	5.4	3	19.4	3	26	3	7.7	12/20	BH	MMB BH
			4	4	3	5.0	3	19.6	3	26	3	7.6	12/21	MMB	MMB X
Ref.Tox.-copper	250	mg/L	0	All	3	8.3	3	20.8	3	25	3	7.6	12/17	JL	X MB
			1	1	3	6.9	3	19.7	3	25	3	7.7	12/18	JL	BH CR
			2	2	3	6.5	3	19.2	3	26	3	7.9	12/19	JL	MB MMB
			3	3	3	5.6	3	19.3	3	26	3	7.7	12/20	BH	MMB BH
			4	4	3	5.8	3	19.6	3	26	3	7.7	12/21	MMB	MMB X



Reference Toxicant Test Water Quality Datasheet

CLIENT	PND Engineers	PROJECT	Douglas Harbor	SPECIES	Port Gamble / Bath	TEST START DATE	16Dec08	TIME	1400
NEWFIELDS JOB NUMBER	1414-001-860	PROJECT MANAGER	Brian Hester	QUANTITY OF STOCK TARGET:	3.93 mL	TEST END DATE	20Dec08	TIME	1300
NEWFIELDS LABORATORY	Port Gamble / Bath	DILUTION WATER BATCH	FSW121608	QUANTITY OF STOCK ACTUAL:		INITIAL & DATE		PROTOCOL	USEPAUSCOE 1988 / NEWFIELDS B10067

WATER QUALITY DATA

CLIENT/ NEWFIELDS ID	TEST CONDITIONS		CONCENTRATION value	units	DAY	REP	DO (mg/L)		TEMP. (°C)	SALINITY (ppt)		pH		Date	Tech	FEEDING
	meter	D.O.					meter	°C		meter	ppt	meter	unit			
Ref.Tox.-copper			500	mg/L	0	All	3	8.2	20.8	3	25	3	7.6	12/17	✓	X MB
					1	1	3	6.8	19.6	3	26	3	7.7	12/18	✓	BH CR
					2	2	3	6.5	19.2	3	26	3	7.9	12/19	✓	MB NMB
					3	3	3	6.3	19.1	3	26	3	7.8	12/20	BH	MUB BH
					4	4	3	5.6	19.5	3	26	3	7.7	12/21	NMB	NMB X
Ref.Tox.-copper					0	All	3	8.4	20.7	3	25	3	7.6	12/17	✓	X MB
					1	1	3	7.0	19.8	3	26	3	7.7	12/18	✓	BH CR
					2	2	3	6.8	19.0	3	26	3	7.9	12/19	✓	MB NMB
					3	3	3			3		3		12/20	BH	NMB
					4	4										

**REFERENCE TOXICANT TEST
SURVIVAL DATASHEET**



SPECIES <i>Mysidopsis bahia</i>	
NEWFIELDS LABORATORY Port Gamble / Bath	PROTOCOL USEPA/USCOE 1998

CLIENT PND Engineers	PROJECT Douglas Harbor	NEWFIELDS JOB NO. 1414-001-860	PROJECT MANAGER Brian Hester
-------------------------	---------------------------	-----------------------------------	---------------------------------

SURVIVAL & BEHAVIOR DATA

OBSERVATION KEY N = normal LOE= loss of equilibrium Q = quiescent DC = discoloration NB = no body F= Floating on Surface				DAY 1			DAY 2			DAY 3			DAY 4		
				DATE	TECHNICIAN	INITIAL # OF ORGANISMS	DATE	TECHNICIAN	INITIAL # OF ORGANISMS	DATE	TECHNICIAN	INITIAL # OF ORGANISMS	DATE	TECHNICIAN	INITIAL # OF ORGANISMS
Ref.Tox.- copper	0 mg/l	1	10	0	N	10	0	N	10	0	N	10	0	N	
		2	10	0	N	10	0	N	10	0	N	10	0	N	
		3	10	0	N	10	0	N	10	0	N	10	0	N	
		4	10	0	N	10	0	N	10	0	N	10	0	N	
		5													
Ref.Tox.- copper	62.5 mg/l	1	10	0	N	10	0	N	10	0	N	10	0	N	
		2	10	0	N	10	0	N	10	0	N	10	0	N	
		3	10	0	N	10	0	N	10	0	N	10	0	N	
		4	10	0	N	10	0	N	10	0	N	10	0	N	
		5													
Ref.Tox.- copper	125 mg/l	1	10	0	N	10	0	N	10	0	N	10	0	N	
		2	10	0	N	9	1	N	8	1	N	8	0	N	
		3	9	0	INB	9	0	N	9	0	N	8	0	NB	
		4	10	0	N	10	0	N	9	0	N	9	0	N	
		5													
Ref.Tox.- copper	250 mg/l	1	10	0	N	8	2	Q	6	2	Q	6	0	Q	
		2	10	0	N	8	0	2NB	4	4	Q	4	0	Q	
		3	10	0	N	8	1	INB	6	2	Q	6	0	Q	
		4	10	0	N	9	1	N	7	2	Q	7	0	Q	
		5													
Ref.Tox.- copper	500 mg/l	1	8	2	N	4	4	Q	0	4	N				
		2	10	0	N	8	1	INB	0	8	N				
		3	10	0	N	8	1	INB	1	7	Q	1	0	Q	
		4	6	4	N	5	1	Q	1	4	Q	0	1	N	
		5													
Ref.Tox.- copper	1000 mg/l	1	10	0	N	5	5	Q	0	5	N				
		2	5	5	N	3	2	Q	0	3	Q				
		3	6	4	N	4	2	Q	0	4	Q				
		4	7	3	N	3	4	Q	0	3	Q				
		5													

①wc 12/19/08 BH

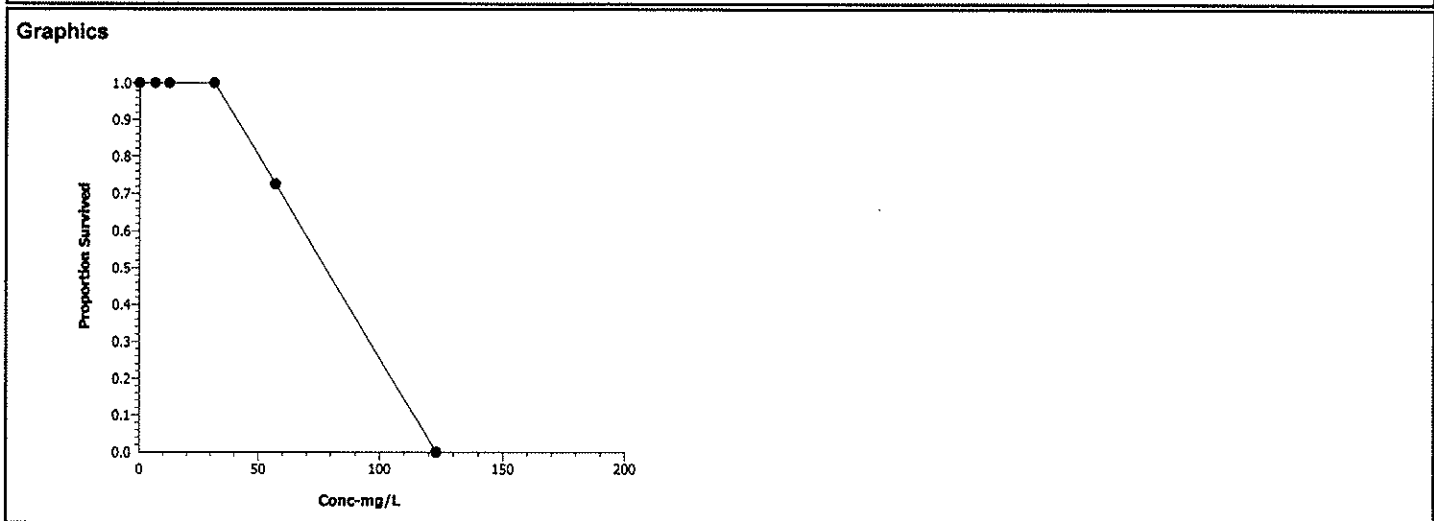
CETIS Analysis Detail

Reference Toxicant 96-h Acute Survival Test	NewFields
---	-----------

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
Proportion Survived	Trimmed Spearman-Kärber	10-2420-9521	10-2420-9521	15 Jan-09 9:40 AM	CETISv1.1.2

Spearman-Kärber Options					Point Estimates		
Threshold Option	Lower Threshold	Trim	Mu	Sigma	EC50/LC50	95% LCL	95% UCL
Control Threshold	0	0.00%	1.842306	0.02088332	69.55147	63.17419	76.57253

Data Summary		Calculated Variate(A/B)							
Conc-mg/	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B
0	Dilution Water	4	1.00000	1.00000	1.00000	0.00000	0.00000	41	41
6.61		4	1.00000	1.00000	1.00000	0.00000	0.00000	40	40
12.6		4	1.00000	1.00000	1.00000	0.00000	0.00000	40	40
31.5		4	1.00000	1.00000	1.00000	0.00000	0.00000	40	40
57.2		4	0.72500	0.50000	0.90000	0.03486	0.17078	29	40
123		4	0.00000	0.00000	0.00000	0.00000	0.00000	0	40



CETIS Analysis Detail

Reference Toxicant 96-h Acute Survival Test NewFields

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
Proportion Survived	Comparison	10-2420-9521	10-2420-9521	15 Jan-09 9:40 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Steel Many-One Rank	C > T	Rank		31.5	57.2	3.17460	42.4476	8.90%

Group Comparisons

Control	vs	Conc-mg/L	Statistic	Critical	P-Value	Ties	Decision(0.05)
Dilution Water		6.61	18	10	0.8000	4	Non-Significant Effect
		12.6	18	10	0.8000	4	Non-Significant Effect
		31.5	18	10	0.8000	4	Non-Significant Effect
		57.2	10	10	0.0350	0	Significant Effect

ANOVA Table

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.4603757	0.1150939	4	14.98	0.00004	Significant Effect
Error	0.1152728	0.0076849	15			
Total	0.57564847	0.1227788	19			

ANOVA Assumptions

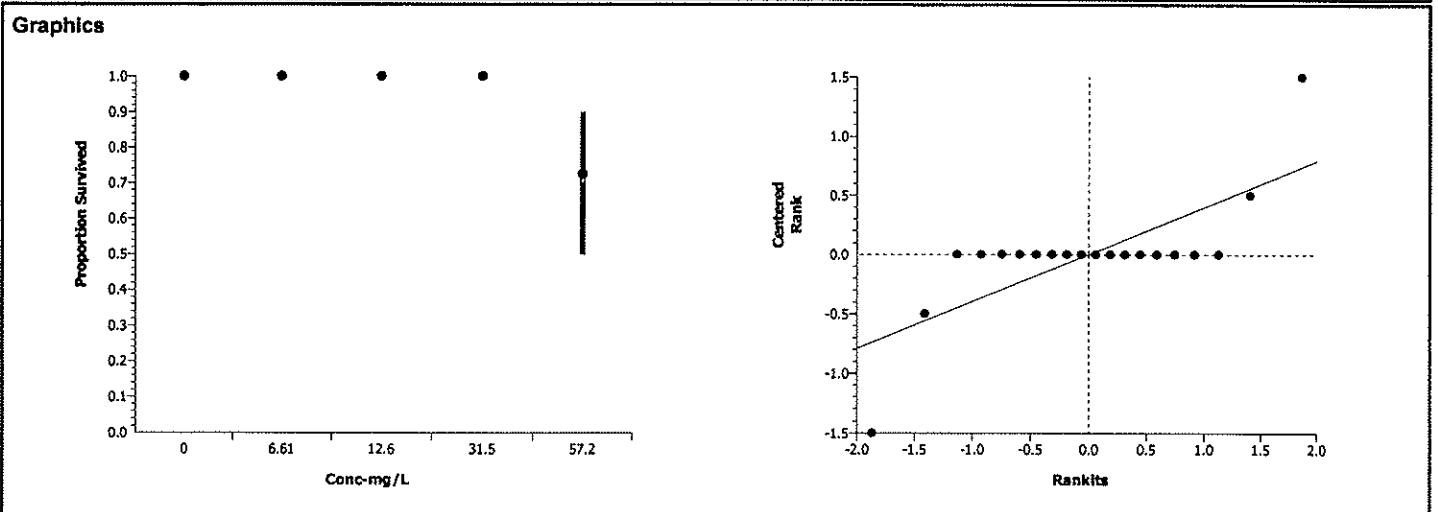
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Modified Levene	7.75338	4.89321	0.00135	Unequal Variances
Distribution	Shapiro-Wilk W	0.58374		0.00000	Non-normal Distribution

Data Summary

Conc-mg/L	Control Type	Count	Original Data				Transformed Data			
			Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Water	4	1.00000	1.00000	1.00000	0.00000	12.5	12.5	12.5	0
6.61		4	1.00000	1.00000	1.00000	0.00000	12.5	12.5	12.5	0
12.6		4	1.00000	1.00000	1.00000	0.00000	12.5	12.5	12.5	0
31.5		4	1.00000	1.00000	1.00000	0.00000	12.5	12.5	12.5	0
57.2		4	0.72500	0.50000	0.90000	0.17078	2.5	1	4	1.29099

Data Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	1.00000	1.00000	1.00000	1.00000						
6.61		1.00000	1.00000	1.00000	1.00000						
12.6		1.00000	1.00000	1.00000	1.00000						
31.5		1.00000	1.00000	1.00000	1.00000						
57.2		0.80000	0.70000	0.50000	0.90000						



Conc-mg/L	Code	Rep	Pos	# Exposed	# Survived
0	D	1	23	10	10
0	D	2	19	10	10
0	D	3	8	11	11
0	D	4	24	10	10
6.61		1	21	10	10
6.61		2	4	10	10
6.61		3	14	10	10
6.61		4	1	10	10
12.6		1	11	10	10
12.6		2	3	10	10
12.6		3	20	10	10
12.6		4	15	10	10
31.5		1	6	10	10
31.5		2	5	10	10
31.5		3	22	10	10
31.5		4	9	10	10
57.2		1	17	10	8
57.2		2	13	10	7
57.2		3	10	10	5
57.2		4	12	10	9
123		1	18	10	0
123		2	2	10	0
123		3	7	10	0
123		4	16	10	0



**Reference Toxicant Test
Water Quality Datasheet**

PO60224.48

CLIENT	PND Engineers	PROJECT	Douglas Harbor	SPECIES	<i>Mysidopsis bahia</i>	PROTOCOL	Port Gamble / Bath	TEST START DATE	16Dec08	TIME	1410
NEWFIELDS JOB NUMBER	1414-001-860	PROJECT MANAGER	Brian Hester	QUANTITY OF STOCK TARGET	30 mL	QUANTITY OF DILUENT TARGET	2000 mL	TEST END DATE	20Dec08	TIME	1300
NEWFIELDS LABORATORY	Port Gamble Bath	DILUTION WATER BATCH	FSW121608	QUANTITY OF STOCK ACTUAL	30.0	QUANTITY OF DILUENT ACTUAL	2000.0	INITIAL & DATE	12-16-08	PROTOCOL	USEPAUSCOE 1998 / NEWFIELDS BIO067

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	CONCENTRATION value	units	DAY	REP	DO (mg/L)		TEMP. (C)		SALINITY (ppt)		pH		Date	Tech	FEEDING	
					meter	mg/L	meter	°C	meter	ppt	meter	unit			AM	PM
Ref. Tox.-ammonia	0 mg/L		0	All	3	8.5	3	20.3	3	25	3	7.6	12/17	J	X	MB
			1	1	3	6.5	3	19.6	3	26	3	7.7	12/18	J	BH	CR
			2	2	3	6.5	3	19.3	3	26	3	7.5	12/19	J	MB	NMB
			3	3	3	5.6	3	19.3	3	26	3	7.8	12/20	BH	NMB	BA
			4	4	3	5.8	3	19.5	3	26	3	7.7	12/21	NMB	NMB	X
Ref. Tox.-ammonia	5 mg/L		0	All	3	8.3	3	20.4	3	25	3	7.6	12/17	J	X	MB
			1	1	3	6.3	3	19.4	3	26	3	7.7	12/18	J	BH	CR
			2	2	3	6.2	3	19.3	3	26	3	7.8	12/19	J	MB	NMB
			3	3	3	4.9	3	19.2	3	26	3	7.7	12/20	BH	NMB	BA
			4	4	3	5.4	3	19.6	3	26	3	7.7	12/21	NMB	NMB	X
Ref. Tox.-ammonia	10 mg/L		0	All	3	8.3	3	20.6	3	25	3	7.6	12/17	J	X	MB
			1	1	3	6.5	3	19.6	3	26	3	7.7	12/18	J	BH	CR
			2	2	3	6.4	3	19.3	3	26	3	7.8	12/19	J	MB	NMB
			3	3	3	5.1	3	19.4	3	26	3	7.6	12/20	BH	NMB	BA
			4	4	3	5.8	3	19.6	3	26	3	7.7	12/21	NMB	NMB	X



Reference Toxicant Test Water Quality Datasheet

CLIENT	PND Engineers	PROJECT	Douglas Harbor	SPECIES	Mysidopsis bahia	PROTOCOL	Port Gamble / Bath	TEST START DATE	16Dec08	TIME	1410
NEWFIELDS JOB NUMBER	1414-001-860	PROJECT MANAGER	Brian Hester	QUANTITY OF STOCK TARGET	30 mL	QUANTITY OF DILUENT TARGET	2000 mL	TEST END DATE	20Dec08	TIME	1300
NEWFIELDS LABORATORY	Port Gamble Bath	DILUTION WATER BATCH	FSW121608	QUANTITY OF STOCK ACTUAL		QUANTITY OF DILUENT ACTUAL		INITIAL & DATE		PROTOCOL	USEPAUSCOE 1998 / NEWFIELDS BIO067

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	TEST CONDITIONS	CONCENTRATION value units	DAY	REP	DO (mg/L)		TEMP (C)		SALINITY (ppt)		pH		Date	Tech	FEEDING	
					meter	mg/L	meter	°C	meter	ppt	meter	unit			AM	PM
Ref. Tox.-ammonia	20 mg/L		0	All	3	8.4	3	20.6	3	25	3	7.6	12/17	J	X	MB
			1	1	3	6.4	3	12.3	3	26	3	7.7	12/18	J	BH	CR
			2	2	3	6.3	3	19.4	3	26	3	7.8	12/19	J	MB	MUMB
			3	3	3	5.4	3	19.4	3	26	3	7.6	12/20	BH	MUMB	BA
			4	4	3	5.8	3	19.6	3	27	3	7.7	12/21	MUMB	MUMB	X
Ref. Tox.-ammonia	40 mg/L		0	All	3	8.3	3	20.6	3	25	3	7.5	12/17	J	X	MB
			1	1	3	6.4	3	19.9	3	26	3	7.7	12/18	J	BH	CR
			2	2	3	6.4	3	19.4	3	26	3	7.8	12/19	J	MB	MUMB
			3	3	3	6.1	3	19.3	3	27	3	7.7	12/20	BH	MUMB	BH
			4	4	3	5.6	3	19.6	3	26	3	7.7	12/21	MUMB	MUMB	X
Ref. Tox.-ammonia	80 mg/L		0	All	3	8.3	3	20.6	3	26	3	7.5	12/17	J	X	MB
			1	1	3	6.6	3	19.9	3	26	3	7.6	12/18	J	BH	CR
			2	2	3	6.7	3	19.2	3	26	3	7.7	12/19	J	MB	MUMB
			3	3	3		3		3		3		12/20	BH	MUMB	
			4	4												

**REFERENCE TOXICANT TEST
SURVIVAL DATASHEET**



SPECIES <i>Mysidopsis bahia</i>	
CLIENT PND Engineers	PROJECT Douglas Harbor
NEWFIELDS JOB NO. 1414-001-860	PROJECT MANAGER Brian Hester
NEWFIELDS LABORATORY Port Gamble / Bath	PROTOCOL USEPA/USCOE 1998

SURVIVAL & BEHAVIOR DATA

OBSERVATION KEY N = normal LOE= loss of equilibrium Q = quiescent DC = discoloration NB = no body F= Floating on Surface				DAY 1			DAY 2			DAY 3			DAY 4			
				DATE 12/18			DATE 12/19/08			DATE 12/20/08			DATE 12/21/08			
				TECHNICIAN L			TECHNICIAN MMB			TECHNICIAN MMB			TECHNICIAN MMB			
CLIENT/NEWFIELDS ID	CONC.		REP	INITIAL NUMBER	INITIAL # OF ORGANISMS 10											
	value	units			#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS	#ALIVE	#DEAD	OBS
Ref.Tox.- ammonia	0 mg/l	1	10	0	N	10	0	N	10	0	N	10	0	N		
		2	10	0	N	10	0	N	10	0	N	10	0	N		
		3	10	0	N	11	0	N	11	0	N	11	0	N		
		4	10	0	N	10	0	N	10	0	N	10	0	N		
		5														
Ref.Tox.- ammonia	5 mg/l	1	10	0	N	10	0	N	10	0	N	10	0	N		
		2	10	0	N	10	0	N	10	0	N	10	0	N		
		3	10	0	N	10	0	N	10	0	N	10	0	N		
		4	10	0	N	10	0	N	10	0	N	10	0	N		
		5														
Ref.Tox.- ammonia	10 mg/l	1	10	0	N	10	0	N	10	0	N	10	0	N		
		2	10	0	N	10	0	N	10	0	N	10	0	N		
		3	10	0	N	10	0	N	10	0	N	10	0	N		
		4	10	0	N	10	0	N	10	0	N	10	0	N		
		5														
Ref.Tox.- ammonia	20 mg/l	1	10	0	N	10	0	N	10	0	N	10	0	N		
		2	10	0	N	10	0	N	10	0	N	10	0	N		
		3	10	0	N	10	0	N	10	0	N	10	0	N		
		4	10	0	N	10	0	N	10	0	N	10	0	N		
		5														
Ref.Tox.- ammonia	40 mg/l	1	10	0	N	10	0	N	10	0	Q	8	2	Q		
		2	10	0	N	10	0	N	10	0	Q	7	3	Q		
		3	9	1	N	7	0	2NB	5	2	Q	5	0	Q		
		4	10	0	N	10	0	N	9	1	Q	9	0	Q		
		5														
Ref.Tox.- ammonia	80 mg/l	1	7	3	N	1	6	Q	0	1	N	—	—	—		
		2	8	2	N	5	3	Q	0	5	—	—	—			
		3	9	1	N	2	7	Q	0	2	—	—	—			
		4	10	0	N	1	9	Q	0	1	—	—	—			
		5														



Ammonia Analysis Total Ammonia (mg/L)

Client/Project: <i>Douglas Harbor</i>	Organism: <i>Mysid-NH₃ R.T.</i>	NewFields Test ID:	Test Duration (days):
--	---	--------------------	-----------------------

PRETEST / INITIAL / FINAL / OTHER (circle one) DAY of TEST: _____
OVERLYING (OV) / POREWATER (PW) (circle one)

Calibration Standards Temperature		Sample temperature should be within $\pm 1^\circ\text{C}$ of standards temperature at time and date of analysis.
Date:	Temperature:	
<i>12/17/08</i>	<i>20.0</i>	

Sample ID or Description	Conc. or Rep	Date of Sampling and Initials	Ammonia Value (mg/L)	Temp °C	Date of Reading and Initials	Sample Preserved (Y/N)	pH	Sal (ppt)	Sulf. mg/L
<i>Control</i>	<i>Bulle</i>	<i>12/17/08 CR</i>	<i>0.00</i>	<i>20.5</i>	<i>12/17/08 CR</i>	<i>N</i>			
<i>5</i>	↓	↓	<i>6.61</i>		↓	↓			
<i>10</i>	↓	↓	<i>12.6</i>		↓	↓			
<i>20</i>	↓	↓	<i>31.5</i>		↓	↓			
<i>40</i>	↓	↓	<i>57.2</i>		↓	↓			
<i>80</i>	↓	↓	<i>123</i>		↓	↓			



Reference Toxicant Ammonia Spiking Worksheet

Mysid

~~Lepto NH₃ RT~~

~~10/1/08~~ 12/16/08

Assumptions in Model
Stock ammonia concentration is 9,000 mg/L = 9 mg/mL

Actual Reading
~~7.41667~~ 8000

Test Solutions			Volume of stock to reach desired concentration		
Measured Concentration mg/L	Desired Concentration mg/L	Volume mL	mL stock to increase		
		80	2000	FRESH WATER	SALT WATER
				20.000	30
				0.000	0
				0.000	0
				0.000	0
				0.000	0
				0.000	0

Table D.5 Test Results for the SPP Larval Test with *Mytilus* sp.

Treatment	SPP (%)	Rep	Normal	Abnormal	Total	Percent Combined Normal Survival	Percent Normal Survival	Percent Survival	Mean Percentage Combined Normal Survival	SD	Mean Percentage Normal Survival	SD	Mean Percentage Survival	SD
Control	0	1	348	10	358	90.9	97.2	93.5	93.5	3.5	97.8	0.5	95.6	3.5
		2	377	8	385	98.4	97.9	100.0						
		3	364	8	372	95.0	97.8	97.1						
		4	343	5	348	89.6	98.6	90.9						
		5	359	10	369	93.7	97.3	96.3						
Brine Control	0	1	329	10	339	85.9	97.1	88.5	93.1	6.7	98.2	0.7	93.8	4.4
		2	397	6	403	103.7	98.5	100.0						
		3	345	4	349	90.1	98.9	91.1						
		4	362	6	368	94.5	98.4	96.1						
		5	350	7	357	91.4	98.0	93.2						
Site Water Control	0	1	349	12	361	91.1	96.7	94.3	90.8	9.5	97.9	1.0	92.2	9.1
		2	380	5	385	99.2	98.7	100.0						
		3	384	7	391	100.3	98.2	100.0						
		4	327	10	337	85.4	97.0	88.0						
		5	298	3	301	77.8	99.0	78.6						

Table D.5 Test Results for the SPP Larval Test with *Mytilus* sp.

Treatment	SPP (%)	Rep	Normal	Abnormal	Total	Percent Combined Normal Survival	Percent Normal Survival	Percent Survival	Mean Percentage Combined Normal Survival	SD	Mean Percentage Normal Survival	SD	Mean Percentage Survival	SD
Area 1	1	1	348	7	355	97.2	98.0	92.7	96.0	4.1	98.0	0.5	92.7	5.2
		2	320	7	327	89.3	97.9	85.4						
		3	342	10	352	95.5	97.2	91.9						
		4	379	5	384	100	98.7	100.0						
		5	352	7	359	98.3	98.1	93.7						
Area 1	10	1	332	5	337	93.1	98.5	88.0	96.9	3.7	98.2	0.4	93.9	5.2
		2	358	5	363	98.5	98.6	94.8						
		3	375	8	383	100	97.9	100.0						
		4	334	8	342	92.7	97.7	89.3						
		5	366	7	373	100	98.1	97.4						
Area 1	50	1	318	5	323	88.8	98.5	84.3	96.2	4.8	97.7	0.8	93.6	6.9
		2	411	12	423	100	97.2	100.0						
		3	385	12	397	100	97.0	100.0						
		4	352	10	362	98.3	97.2	94.5						
		5	336	5	341	93.8	98.5	89.0						
Area 1	100	1	231	131	362	64.5	63.8	94.5	63.2	7.7	64.2	7.3	92.1	3.9
		2	252	116	368	70.4	68.5	96.1						
		3	243	91	334	67.8	72.8	87.2						
		4	225	135	360	62.8	62.5	94.0						
		5	181	158	339	50.5	53.4	88.5						

Table D.5 Test Results for the SPP Larval Test with *Mytilus* sp.

Treatment	SPP (%)	Rep	Normal	Abnormal	Total	Percent Combined Normal Survival	Percent Normal Survival	Percent Survival	Mean Percentage Combined Normal Survival	SD	Mean Percentage Normal	SD	Mean Percentage Survival	SD
Area 2	1	1	380	13	393	100	96.7	100.0						
		2	351	9	360	98.0	97.5	94.0						
		3*	710	21	731	99.1	97.1	100.0						
		4	381	8	389	100	97.9	100.0						
		5	388	6	394	100	98.5	100.0	99.4	0.9	97.5	0.7	98.8	2.7
Area 2	10	1	329	4	333	91.8	98.8	86.9						
		2	366	5	371	100	98.7	96.9						
		3	339	7	346	94.6	98.0	90.3						
		4	404	8	412	100	98.1	100.0						
		5	358	7	365	99.9	98.1	95.3	97.3	3.8	98.3	0.4	93.9	5.2
Area 2	50	1	351	9	360	98.0	97.5	94.0						
		2	364	2	366	100	99.5	95.6						
		3	351	12	363	98.0	96.7	94.8						
		4	326	10	336	91.0	97.0	87.7						
		5	342	11	353	95.5	96.9	92.2	96.5	3.5	97.5	1.1	92.8	3.1
Area 2	100	1	184	191	375	51.4	49.1	97.9						
		2	139	210	349	38.8	39.8	91.1						
		3	130	218	348	36.3	37.4	90.9						
		4	133	233	366	37.1	36.3	95.6						
		5	119	211	330	33.2	36.1	86.2	39.4	7.0	39.7	5.4	92.3	4.6

Table D.5 Test Results for the SPP Larval Test with *Mytilus* sp.

Treatment	SPP (%)	Rep	Normal	Abnormal	Total	Percent Combined Normal Survival	Percent Normal Survival	Percent Survival	Mean Percentage Combined Normal Survival	SD	Mean Percentage Normal	SD	Mean Percentage Survival	SD
Area 4A	1	1	373	4	377	100	98.9	98.4						
		2	332	6	338	92.7	98.2	88.3						
		3	338	4	342	94.4	98.8	89.3						
		4	359	8	367	100	97.8	95.8						
		5	348	8	356	97.2	97.8	93.0	96.8	3.3	98.3	0.6	93.0	4.3
Area 4A	10	1	319	8	327	89.1	97.6	85.4						
		2	390	10	400	100	97.5	100.0						
		3	332	7	339	92.7	97.9	88.5						
		4	319	6	325	89.1	98.2	84.9						
		5	343	6	349	95.8	98.3	91.1	93.3	4.7	97.9	0.3	90.0	6.1
Area 4A	50	1	393	6	399	100	98.5	100.0						
		2	424	9	433	100	97.9	100.0						
		3	330	4	334	92.1	98.8	87.2						
		4	328	4	332	91.6	98.8	86.7						
		5	351	8	359	98.0	97.8	93.7	96.3	4.2	98.4	0.5	93.5	6.5
Area 4A	100	1	54	261	315	15.1	17.1	82.2						
		2	62	284	346	17.3	17.9	90.3						
		3	58	282	340	16.2	17.1	88.8						
		4	45	299	344	12.6	13.1	89.8						
		5	70	256	326	19.5	21.5	85.1	16.1	2.6	17.3	3.0	87.3	3.5

Table D.5 Test Results for the SPP Larval Test with *Mytilus* sp.

Treatment	SPP (%)	Rep		Total	Percent Combined Normal Survival		Percent Normal Survival		Percent Survival	Mean Percentage Combined Normal Survival		Mean Percentage Normal Survival		SD
		Normal	Abnormal		Normal	Survival	Normal	Survival		Normal	Survival			
Area 4B	1	1	334	3	337	93.2	99.1	88.0	99.1	88.0				
		2	374	12	386	100	96.9	100.0	96.9	100.0				
		3	363	2	365	100	99.5	95.3	99.5	95.3				
		4	365	4	369	100	98.9	96.3	98.9	96.3				
		5	364	7	371	100	98.1	96.9	98.1	96.9	3.0	98.5	1.0	95.3
Area 4B	10	1	348	8	356	97.2	97.8	93.0	97.8	93.0				
		2	343	9	352	95.8	97.4	91.9	97.4	91.9				
		3	324	9	333	90.5	97.3	86.9	97.3	86.9				
		4	394	9	403	100	97.8	100.0	97.8	100.0				
		5	330	5	335	92.1	98.5	87.5	98.5	87.5	3.8	97.8	0.5	91.9
Area 4B	50	1	254	112	366	70.9	69.4	95.6	69.4	95.6				
		2	201	140	341	56.1	58.9	89.0	58.9	89.0				
		3	240	114	354	67.0	67.8	92.4	67.8	92.4				
		4	179	137	316	50.0	56.6	82.5	56.6	82.5				
		5	213	160	373	59.5	57.1	97.4	57.1	97.4	8.4	62.0	6.1	91.4
Area 4B	100	1	0	359	359	0.0	0.0	93.7	0.0	93.7				
		2	0	370	370	0.0	0.0	96.6	0.0	96.6				
		3	0	335	335	0.0	0.0	87.5	0.0	87.5				
		4	0	336	336	0.0	0.0	87.7	0.0	87.7				
		5	0	366	366	0.0	0.0	95.6	0.0	95.6	0.0	0.0	0.0	92.2

Table D.5 Test Results for the SPP Larval Test with *Mytilus* sp.

Treatment	SPP (%)	Rep	Normal	Abnormal	Total	Percent Combined		Percent Survival		Mean Percentage Combined		Mean Percentage Normal		Mean Percentage Survival		
						Normal	Survival	Normal	Survival	Normal	Survival	Normal	Survival	Normal	Survival	Normal

* Test chamber was double inoculated.

100: Calculated value is >100, reported value is corrected to 100%

Table D6. Water Quality Summary for the 10-Day Acute test with *Mytilus* sp.

Treatment	SPP (%)	Dissolved Oxygen (mg/L)			Temperature (°C)			pH (units)			Salinity (ppt)		
		Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Control	0	7.8	7.0	8.7	16.3	15.1	17.1	7.8	7.5	8.0	31.0	31.0	31.0
	0	7.4	7.2	7.6	16.5	15.2	17.2	7.8	7.6	8.0	31.0	31.0	31.0
	0	7.9	7.1	8.9	16.6	15.3	17.4	7.8	7.6	8.0	31.0	31.0	31.0
Area 1	1	7.7	7.1	8.2	16.4	15.2	17.2	7.9	7.6	8.0	30.7	30.0	31.0
	10	7.7	7.2	8.4	16.3	15.1	17.1	7.9	7.7	8.0	31.0	31.0	31.0
	50	7.6	7.2	8.0	16.4	15.2	17.2	8.0	7.9	8.1	30.7	30.0	31.0
	100	7.4	7.1	7.6	16.7	16.0	17.2	8.1	8.0	8.2	30.0	30.0	30.0
Area 2	1	7.7	7.1	8.3	16.4	15.5	17.1	8.1	7.9	8.2	30.7	30.0	31.0
	10	7.8	7.3	8.3	16.2	15.2	16.9	8.0	7.8	8.1	30.7	30.0	31.0
	50	7.5	7.1	7.9	16.4	15.5	17.0	8.1	8.0	8.2	30.7	30.0	31.0
	100	7.4	7.1	7.6	16.4	15.4	17.0	8.2	8.2	8.3	30.0	30.0	30.0
Area 4A	1	7.5	6.9	8.4	16.9	15.1	17.9	7.9	7.9	8.0	30.7	30.0	31.0
	10	7.3	6.6	8.3	17.3	15.2	18.6	8.0	7.9	8.0	31.3	31.0	32.0
	50	7.2	6.7	8.0	18.3	15.3	20.4	8.1	8.0	8.2	31.0	31.0	31.0
	100	7.2	6.6	7.6	17.3	15.6	18.4	8.2	8.2	8.3	30.7	30.0	31.0
Area 4B	1	7.4	7.0	8.2	17.2	15.2	18.5	8.1	7.9	8.2	30.7	30.0	31.0
	10	7.3	6.9	8.2	18.3	15.3	19.8	8.0	7.9	8.1	31.0	31.0	31.0
	50	7.2	6.9	7.9	17.0	15.1	18.3	8.2	8.1	8.2	30.7	30.0	31.0
	100	7.0	6.6	7.5	17.4	16.0	18.2	8.3	8.2	8.3	30.7	30.0	31.0
Lower Comp	1	7.3	6.7	8.2	18.2	15.5	19.8	8.1	8.1	8.1	31.0	31.0	31.0
	10	7.5	6.9	8.2	17.2	15.3	18.4	8.1	8.0	8.1	31.0	31.0	31.0
	50	7.4	7.0	7.9	17.1	15.1	18.4	8.0	8.0	8.0	31.0	31.0	31.0
	100	7.2	6.8	7.7	18.2	15.7	19.4	8.1	8.0	8.1	30.7	30.0	31.0

BIVALVE LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE PHASE ENDPOINT DATA SHEET



SPECIES <i>mytilus sp.</i>
CLIENT: PND
PROJECT: Douglas Harbor
NEWFIELDS JOB NUM: 1414-001-860
PROJECT MANAGER: Brian Hester
NEWFIELDS LABORATORY: Port Gamble Incubator
PROTOCOL USE PAUSACE 1998

LARVAL OBSERVATION DATA

CLIENT/NEWFIELDS ID	CONCENTRATION		VIAL NUMBER	REP	NUMBER NORMAL	NUMBER ABNORMAL	DATE	TECHNICIAN	COMMENTS
	value	units							
ZERO-TIME (PRE)	0 %			1	423		11/5/09 ↓	↓	
				2	399 320				
				3	348				
				4	320				
				5	425				
Control / .	0 %			1	348	10	12/30/08 ↓	↓	
				2	377	8			
				3	364	8			
				4	343	5			
				5	359	10			
Brine Control /	0 %			1	329	10	↓	↓	
				2	397	6			
				3	345	4			
				4	362	6			
				5	350	7			
Site Water Control /	0 %			1	349	12	↓	↓	
				2	380	5			
				3	384	7			
				4	327	10			
				5	298	3			

5

10

15

BIVALVE LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE PHASE ENDPOINT DATA SHEET



SPECIES
mytilus sp.

CLIENT PND	PROJECT Douglas Harbor	NEWFIELDS JOB NUM 1414-001-860	PROJECT MANAGER Brian Hester	NEWFIELDS LABORATORY Port Gamble Incubator	PROTOCOL USEPAUSACE 1998
---------------	---------------------------	-----------------------------------	---------------------------------	---	--------------------------------

LARVAL OBSERVATION DATA

CLIENT/NEWFIELDS ID	CONCENTRATION		VIAL NUMBER	REP	NUMBER NORMAL	NUMBER ABNORMAL	DATE	TECHNICIAN	COMMENTS
	value	units							
Area 1/.	1 %			1	348	7	1/6/09	↓	
				2	320	7			
				3	342	10			
				4	379	5			
				5	352	7			
Area 1/.	10 %			1	332	5		↓	
				2	366 358	5 5			
				3	375	8			
				4	334	8			
				5	366	7			
Area 1/.	50 %			1	318	5		↓	
				2	411	12			
				3	385	12			
				4	352	10			
				5	336	5			
Area 1/.	100 %			1	231	131		↓	
				2	252	116			
				3	243	91			
				4	225	135			
				5	181	158			

BIVALVE LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE PHASE ENDPOINT DATA SHEET



SPECIES
mytilus sp.

CLIENT PND	PROJECT Douglas Harbor	NEWFIELDS JOB NUM 1414-001-860	PROJECT MANAGER Brian Hester	NEWFIELDS LABORATORY Port Gamble Incubator	PROTOCOL USEPA/USACE 1998
---------------	---------------------------	-----------------------------------	---------------------------------	---	---------------------------------

LARVAL OBSERVATION DATA

CLIENT/ NEWFIELDS ID	CONCENTRATION		VIAL NUMBER	REP	NUMBER NORMAL	NUMBER ABNORMAL	DATE	TECHNICIAN	COMMENTS
	value	units							
Area 2 / .	1 %			1	380	13	1/6/09	J	
				2	351	9			
				3	710	21			
				4	381	8			
				5	388	6			
Area 2 / .	10 %			1	329	4	1/6/09	J	
				2	366	5			
				3	339	7			
				4	404	8			
				5	358	7			
Area 2 / .	50 %			1	351	9	1/6/09	J	
				2	364	2			
				3	351	12			
				4	326	10			
				5	342	11			
Area 2 / .	100 %			1	184	191	1/6/09	J	
				2	139	210			
				3	130	218			
				4	133	233			
				5	119	211			

BIVALVE LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE PHASE ENDPOINT DATA SHEET



SPECIES
mytilus sp.

CLIENT PND	PROJECT Douglas Harbor	NEWFIELDS JOB NUM 1414-001-860	PROJECT MANAGER Brian Hester	NEWFIELDS LABORATORY Port Gamble Incubator	PROTOCOL USEPA/USACE 1998
---------------	---------------------------	-----------------------------------	---------------------------------	---	---------------------------------

LARVAL OBSERVATION DATA

CLIENT/ NEWFIELDS ID	CONCENTRATION		VIAL NUMBER	REP	NUMBER NORMAL	NUMBER ABNORMAL	DATE	TECHNICIAN	COMMENTS
	value	units							
Area 4A / .	1 %			1	373	4	1/6/09	J	
				2	332	6	↓	↓	
				3	338	4			
				4	359	8			
				5	348	8			
Area 4A / .	10 %			1	319	8	1/7/09	J	
				2	390	10	↓	↓	
				3	332	7			
				4	319	6			
				5	343	6			
Area 4A / .	50 %			1	393	6	↓	↓	
				2	424	9			
				3	330	4			
				4	328	4			
				5	351	8			
Area 4A / .	100 %			1	54	261	↓	↓	
				2	62	284			
				3	58	282			
				4	45	299			
				5	70	256			

BIVALVE LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE PHASE ENDPOINT DATA SHEET



SPECIES
mytilus sp.

CLIENT PND	PROJECT Douglas Harbor	NEWFIELDS JOB NUM 1414-001-860	PROJECT MANAGER Brian Hester	NEWFIELDS LABORATORY Port Gamble Incubator	PROTOCOL USEPA/USACE 1998
---------------	---------------------------	-----------------------------------	---------------------------------	---	---------------------------------

LARVAL OBSERVATION DATA

CLIENT/ NEWFIELDS ID	CONCENTRATION		VIAL NUMBER	REP	NUMBER NORMAL	NUMBER ABNORMAL	DATE	TECHNICIAN	COMMENTS
	value	units							
Area 4B / .	1 %			1	334	3	1/7/09	J	
				2	374	12			
				3	363	2			
				4	365	4			
				5	364	7			
Area 4B / .	10 %			1	348	8			
				2	343	9			
				3	324	9			
				4	394	9			
				5	330	5			
Area 4B / .	50 %			1	254	112			
				2	201	140			
				3	240	114	1/21/09		
				4	179	137			
				5	213	160			
Area 4B / .	100 %			1	Ø	359			
				2	Ø	370			
				3	Ø	335			
				4	Ø	336			
				5	Ø	366			

BIVALVE LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE PHASE ENDPOINT DATA SHEET



SPECIES
mytilus sp.

CLIENT PND	PROJECT Douglas Harbor	NEWFIELDS JOB NUM 1414-001-860	PROJECT MANAGER Brian Hester	NEWFIELDS LABORATORY Port Gamble Incubator	PROTOCOL USEPA/USACE 1998
---------------	---------------------------	-----------------------------------	---------------------------------	---	---------------------------------

LARVAL OBSERVATION DATA

CLIENT/ NEWFIELDS ID	CONCENTRATION		VIAL NUMBER	REP	NUMBER NORMAL	NUMBER ABNORMAL	DATE	TECHNICIAN	COMMENTS
	value	units							
Lower Comp / .	1 %			1	366	7	11/2/09	J	
				2	408	8			
				3	344	6			
				4	369	8			
				5	351	3			
Lower Comp / .	10 %			1	348	10			
				2	351	10			
				3	305	6			
				4	350	6			
				5	372	9			
Lower Comp / .	50 %			1	297	7			
				2	400	9			
				3	337	7			
				4	436	9			
				5	322	4			
Lower Comp / .	100 %			1	348	5			
				2	366	5			
				3	327	4			
				4	362	4			
				5	344	10			

CETIS Test Summary

Report Date:

17 Mar-09 2:54 PM

Test Link:

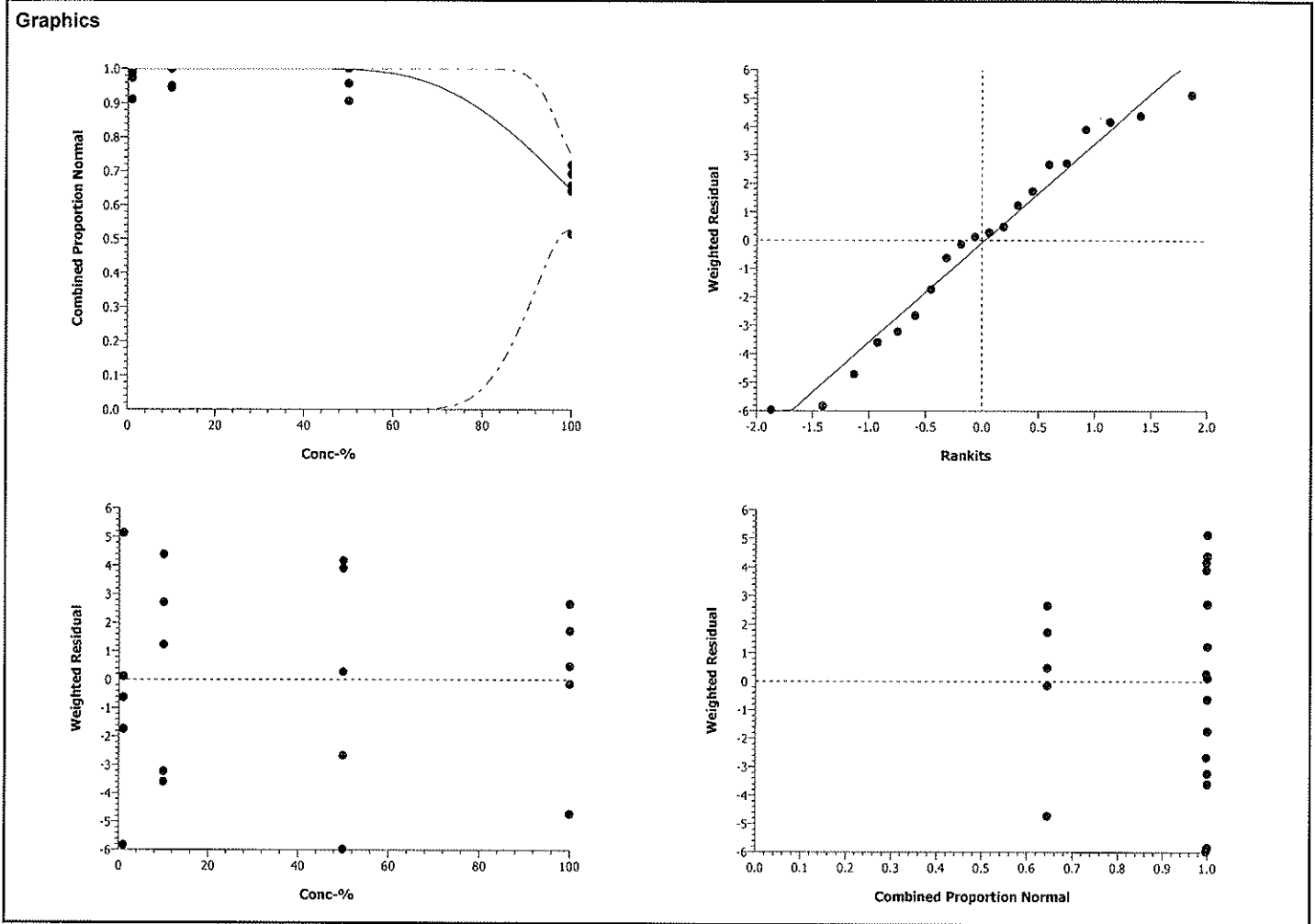
05-2054-8780

Mussel Shell Development Test							NewFields	
Test No:	05-0157-5065	Test Type:	Development-Survival	Duration:	50h			
Start Date:	21 Dec-08 11:50 PM	Protocol:	EPA-823-B-98-005 (1998)	Species:	Mytilus galloprovincialis			
Ending Date:	24 Dec-08 01:45 AM	Dil Water:	Laboratory Seawater	Source:	Carlsbad Aquafarms			
Setup Date:	21 Dec-08 11:50 PM	Brine:	Not Applicable					
Sample No:	05-4486-2204	Code:	544862204	Client:	PND			
Sample Date:	17 Mar-09 02:29 PM	Material:	Marine Monitoring Sample	Project:	Douglas Harbor			
Receive Date:	17 Mar-09 02:29 PM	Source:	Douglas Harbor					
Sample Age:	N/A	Station:	Area 1					
Comparison Summary								
Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method		
16-8723-5872	Combined Proportion Norma	50	100	70.7107	9.41%	Dunnett's Multiple Comparison		
Point Estimate Summary								
Analysis	Endpoint	% Effect	Conc-%	95% LCL	95% UCL	Method		
13-3542-1240	Combined Proportion Normal	10	77.20018	N/A	N/A	Linear Regression		
		15	82.76348	N/A	N/A			
		20	87.46957	N/A	N/A			
		25	91.71968	N/A	N/A			
		40	103.3677	N/A	N/A			
		50	111.0759	N/A	N/A			
Combined Proportion Normal Summary								
Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Brine Reagent	5	0.93525	0.89556	0.98433	0.01570	0.03510	3.75%
0	Dilution Water	5	0.92078	0.85901	0.98511	0.02121	0.04743	5.15%
0	Receiving Wat	5	0.90347	0.77807	0.99217	0.04019	0.08987	9.95%
1		5	0.90914	0.83551	0.98956	0.02475	0.05534	6.09%
10		5	0.92167	0.86684	0.97911	0.02246	0.05022	5.45%
50		5	0.91361	0.83029	0.97163	0.02721	0.06085	6.66%
100		5	0.59112	0.47258	0.65796	0.03206	0.07169	12.13%
Combined Proportion Normal Detail								
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	Brine Reagent	0.90862	0.98433	0.95039	0.89556	0.93734		
0	Dilution Water	0.85901	0.98511	0.90078	0.94517	0.91384		
0	Receiving Wat	0.91123	0.99217	0.98210	0.85379	0.77807		
1		0.90862	0.83551	0.89295	0.98956	0.91906		
10		0.86684	0.93473	0.97911	0.87206	0.95561		
50		0.83029	0.97163	0.96977	0.91906	0.87728		
100		0.60313	0.65796	0.63446	0.58747	0.47258		

CETIS Analysis Detail

Mussel Shell Development Test						NewFields			
Test No:	05-0157-5065	Test Type:	Development-Survival	Duration:	50h				
Start Date:	21 Dec-08 11:50 PM	Protocol:	EPA-823-B-98-005 (1998)	Species:	Mytilus galloprovincialis				
Ending Date:	24 Dec-08 01:45 AM	Dil Water:	Laboratory Seawater	Source:	Carlsbad Aquafarms				
Setup Date:	21 Dec-08 11:50 PM	Brine:	Not Applicable						
Sample No:	05-4486-2204	Code:	544862204	Client:	PND				
Sample Date:	17 Mar-09 02:29 PM	Material:	Marine Monitoring Sample	Project:	Douglas Harbor				
Receive Date:	17 Mar-09 02:29 PM	Source:	Douglas Harbor						
Sample Age:	N/A	Station:	Area 1						
Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version				
Combined Proportion Normal	Linear Regression	05-2054-8780	05-2054-8780	15 Jan-09 8:27 AM	CETISv1.1.2				
Linear Regression Options									
Model Function	Threshold Option	Threshold	Threshold Opt	Reweighted	Pooled Groups	Het Corr			
Log-Normal [NED=A+B*log(X)]	Control Threshold	0.07855297	Yes	Yes	No	Yes			
Regression Summary									
Iters	Log Likelihood	Mu	Sigma	G	Chi-Sq	Critical	P-Value	Decision(0.05)	
10	-2585.62300	-1.42917	0.12329	9.70521	223.03510	28.86930	0.00000	Significant Heterogeneity	
Point Estimates									
% Effect	Conc-%	95% LCL	95% UCL						
10	77.20018	N/A	N/A						
15	82.76348	N/A	N/A						
20	87.46957	N/A	N/A						
25	91.71968	N/A	N/A						
40	103.3677	N/A	N/A						
50	111.0759	N/A	N/A						
Regression Parameters									
Parameter	Estimate	Std Error	95% LCL	95% UCL	t Statistic	P-Value	Decision(0.05)		
Threshold	0.08255922	0.01276513	0.05574067	0.1093778	6.468	0.00000	Significant		
Slope	8.111004	12.02727	-17.15736	33.37937	0.674	0.50864	Not Significant		
Intercept	-11.59203	20.90449	-55.51073	32.32666	-0.555	0.58605	Not Significant		
Residual Analysis									
Attribute	Method	Statistic	Critical	P-Value	Decision(0.05)				
Variances	Bartlett	0.6562603	7.81473	0.88344	Equal Variances				
Distribution	Shapiro-Wilk W	0.955784		0.46342	Normal Distribution				
Data Summary									
		Calculated Variate(A/B)							
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B
0	Dilution Water	5	0.92078	0.85901	0.98511	0.00968	0.04743	1783	1935
1		5	0.90914	0.83551	0.98956	0.01130	0.05534	1741	1915
10		5	0.92167	0.86684	0.97911	0.01025	0.05022	1765	1915
50		5	0.91361	0.83029	0.97163	0.01242	0.06085	1802	1969
100		5	0.59112	0.47258	0.65796	0.01463	0.07169	1132	1915

CETIS Analysis Detail

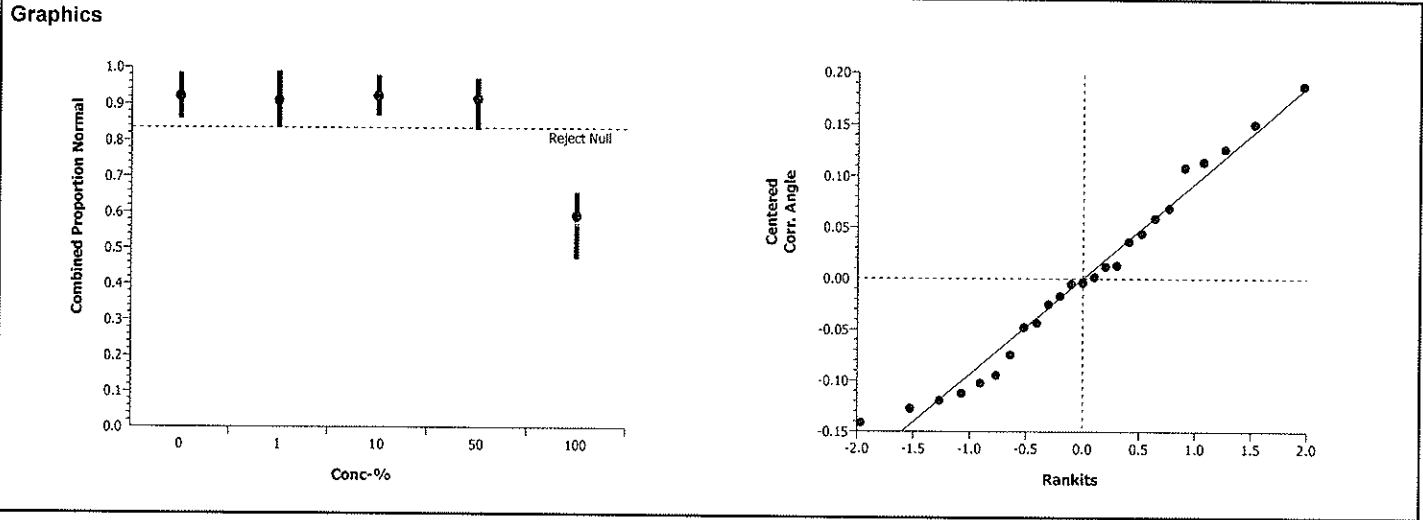


CETIS Analysis Detail

Mussel Shell Development Test							NewFields			
Test No:	05-0157-5065	Test Type:	Development-Survival	Duration:	50h					
Start Date:	21 Dec-08 11:50 PM	Protocol:	EPA-823-B-98-005 (1998)	Species:	Mytilus galloprovincialis					
Ending Date:	24 Dec-08 01:45 AM	Dil Water:	Laboratory Seawater	Source:	Carlsbad Aquafarms					
Setup Date:	21 Dec-08 11:50 PM	Brine:	Not Applicable							
Sample No:	05-4486-2204	Code:	544862204	Client:	PND					
Sample Date:	17 Mar-09 02:29 PM	Material:	Marine Monitoring Sample	Project:	Douglas Harbor					
Receive Date:	17 Mar-09 02:29 PM	Source:	Douglas Harbor							
Sample Age:	N/A	Station:	Area 1							
Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version					
Combined Proportion Normal	Comparison	05-2054-8780	05-2054-8780	15 Jan-09 8:26 AM	CETISv1.1.2					
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD		
Dunnett's Multiple Comparison	C > T	Angular (Corrected)		50	100	2	70.7107	9.41%		
Group Comparisons										
Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)			
Dilution Water		1	0.2725	2.30451	0.7004	0.14703	Non-Significant Effect			
		10	-0.0219	2.30451	0.8070	0.14703	Non-Significant Effect			
		50	0.16617	2.30451	0.7418	0.14703	Non-Significant Effect			
		100	6.595	2.30451	0.0000	0.14703	Significant Effect			
ANOVA Table										
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)				
Between	0.6871554	0.1717889	4	16.88	0.00000	Significant Effect				
Error	0.2035212	0.0101761	20							
Total	0.89067666	0.1819649	24							
ANOVA Assumptions										
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)					
Variances	Bartlett	0.88481	13.27670	0.92673	Equal Variances					
Distribution	Shapiro-Wilk W	0.96682		0.56602	Normal Distribution					
Data Summary										
Data Summary			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Water	5	0.92078	0.85901	0.98511	0.04743	1.29840	1.18587	1.44847	0.09930
1		5	0.90914	0.83551	0.98956	0.05534	1.28102	1.15319	1.46842	0.11582
10		5	0.92167	0.86684	0.97911	0.05022	1.29980	1.19726	1.42576	0.09871
50		5	0.91361	0.83029	0.97163	0.06085	1.28780	1.14619	1.40156	0.11220
100		5	0.59112	0.47258	0.65796	0.07169	0.87764	0.75797	0.94611	0.07261

CETIS Analysis Detail

Data Detail											
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	0.85901	0.98511	0.90078	0.94517	0.91384					
1		0.90862	0.83551	0.89295	0.98956	0.91906					
10		0.86684	0.93473	0.97911	0.87206	0.95561					
50		0.83029	0.97163	0.96977	0.91906	0.87728					
100		0.60313	0.65796	0.63446	0.58747	0.47258					



CETIS Data Worksheet

Mussel Shell Development Test NewFields

Start Date: 21 Dec-08 11:50 PM **Species:** Mytilis galloprovincialis **Sample Code:** 544862204
Ending Date: 24 Dec-08 01:45 AM **Protocol:** EPA-823-B-98-005 (1998) **Sample Source:** Douglas Harbor
Sample Date: 17 Mar-09 02:29 PM **Material:** Marine Monitoring Sample **Sample Station:** Area 1

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	B	1	3	383	358	358	348	
0	B	2	17	383	385	385	377	
0	B	3	9	383	372	372	364	
0	B	4	34	383	348	348	343	
0	B	5	35	383	369	369	359	
0	D	1	13	383	339	339	329	
0	D	2	14	383	403	403	397	
0	D	3	32	383	349	349	345	
0	D	4	19	383	368	368	362	
0	D	5	22	383	357	357	350	
0	R	1	24	383	361	361	349	
0	R	2	2	383	385	385	380	
0	R	3	30	383	391	391	384	
0	R	4	25	383	337	337	327	
0	R	5	23	383	301	301	298	
1		1	5	383	355	355	348	
1		2	6	383	327	327	320	
1		3	15	383	352	352	342	
1		4	26	383	384	384	379	
1		5	18	383	359	359	352	
10		1	27	383	337	337	332	
10		2	31	383	363	363	358	
10		3	4	383	383	383	375	
10		4	21	383	342	342	334	
10		5	33	383	373	373	366	
50		1	7	383	323	323	318	
50		2	28	383	423	423	411	
50		3	10	383	397	397	385	
50		4	16	383	362	362	352	
50		5	8	383	341	341	336	
100		1	29	383	362	362	231	
100		2	11	383	368	368	252	
100		3	12	383	334	334	243	
100		4	20	383	340	340	225	
100		5	1	383	339	339	181	

CETIS Test Summary

Report Date:

17 Mar-09 2:52 PM

Test Link:

15-7723-1824

Mussel Shell Development Test							NewFields	
Test No:	05-0157-5065	Test Type:	Development-Survival	Duration:	50h			
Start Date:	21 Dec-08 11:50 PM	Protocol:	EPA-823-B-98-005 (1998)	Species:	Mytilus galloprovincialis			
Ending Date:	24 Dec-08 01:45 AM	Dil Water:	Laboratory Seawater	Source:	Carlsbad Aquafarms			
Setup Date:	21 Dec-08 11:50 PM	Brine:	Not Applicable					
Sample No:	08-4789-3526	Code:	847893526	Client:	PND			
Sample Date:	17 Mar-09 02:28 PM	Material:	Marine Monitoring Sample	Project:	Douglas Harbor			
Receive Date:	17 Mar-09 02:28 PM	Source:	Douglas Harbor					
Sample Age:	N/A	Station:	Area 2					
Comments:	Area 2							
Comparison Summary								
Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method		
17-8262-4069	Combined Proportion Norma	50	100	70.7107	7.14%	Dunnett's Multiple Comparison		
Point Estimate Summary								
Analysis	Endpoint	% Effect	Conc-%	95% LCL	95% UCL	Method		
08-8398-6063	Combined Proportion Normal	50	87.33856	85.43842	89.28096	Trimmed Spearman-Karber		
Combined Proportion Normal Summary								
Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Brine Reagent	5	0.92078	0.85901	0.98511	0.02121	0.04743	5.15%
0	Dilution Water	5	0.93525	0.89556	0.98433	0.01570	0.03510	3.75%
0	Receiving Wat	5	0.90347	0.77807	0.99217	0.04019	0.08987	9.95%
1		5	0.96301	0.91645	0.99478	0.01704	0.03810	3.96%
10		5	0.92301	0.85901	0.98058	0.02241	0.05012	5.43%
50		5	0.90548	0.85117	0.95039	0.01638	0.03662	4.04%
100		5	0.36815	0.31070	0.48042	0.02932	0.06556	17.81%
Combined Proportion Normal Detail								
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	Brine Reagent	0.85901	0.98511	0.90078	0.94517	0.91384		
0	Dilution Water	0.90862	0.98433	0.95039	0.89556	0.93734		
0	Receiving Wat	0.91123	0.99217	0.98210	0.85379	0.77807		
1		0.99217	0.91645	0.92689	0.99478	0.98477		
10		0.85901	0.95561	0.88512	0.98058	0.93473		
50		0.91645	0.95039	0.91645	0.85117	0.89295		
100		0.48042	0.36292	0.33943	0.34726	0.31070		

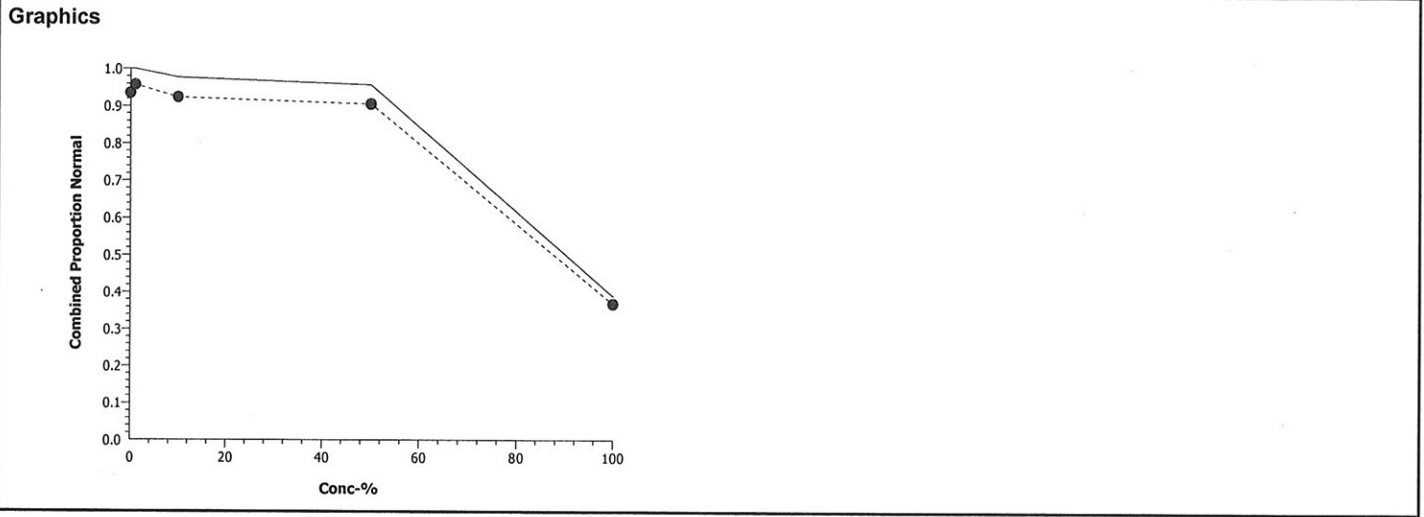
CETIS Analysis Detail

Mussel Shell Development Test			NewFields
Test No: 05-0157-5065	Test Type: Development-Survival	Duration: 50h	
Start Date: 21 Dec-08 11:50 PM	Protocol: EPA-823-B-98-005 (1998)	Species: Mytilus galloprovincialis	
Ending Date: 24 Dec-08 01:45 AM	Dil Water: Laboratory Seawater	Source: Carlsbad Aquafarms	
Setup Date: 21 Dec-08 11:50 PM	Brine: Not Applicable		
Sample No: 08-4789-3526	Code: 847893526	Client: PND	
Sample Date: 17 Mar-09 02:28 PM	Material: Marine Monitoring Sample	Project: Douglas Harbor	
Receive Date: 17 Mar-09 02:28 PM	Source: Douglas Harbor		
Sample Age: N/A	Station: Area 2		
Comments: Area 2			

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
Combined Proportion Normal	Trimmed Spearman-Karber	15-7723-1824	15-7723-1824	17 Mar-09 2:52 PM	CETISv1.1.2

Spearman-Karber Options					Point Estimates		
Threshold Option	Lower Threshold	Trim	Mu	Sigma	EC50/LC50	95% LCL	95% UCL
Control Threshold	0.06475196	38.91%	1.941206	0.004776405	87.33856	85.43842	89.28096

Data Summary		Calculated Variate(A/B)							
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B
0	Dilution Water	5	0.93525	0.89556	0.98433	0.00716	0.03510	1791	1915
1		5	0.96301	0.91645	0.99478	0.00778	0.03810	2210	2309
10		5	0.92301	0.85901	0.98058	0.01023	0.05012	1796	1944
50		5	0.90548	0.85117	0.95039	0.00747	0.03662	1734	1915
100		5	0.36815	0.31070	0.48042	0.01338	0.06556	705	1915



CETIS Analysis Detail

Mussel Shell Development Test				NewFields
Test No:	05-0157-5065	Test Type:	Development-Survival	Duration: 50h
Start Date:	21 Dec-08 11:50 PM	Protocol:	EPA-823-B-98-005 (1998)	Species: Mytilus galloprovincialis
Ending Date:	24 Dec-08 01:45 AM	Dil Water:	Laboratory Seawater	Source: Carlsbad Aquafarms
Setup Date:	21 Dec-08 11:50 PM	Brine:	Not Applicable	
Sample No:	08-4789-3526	Code:	847893526	Client: PND
Sample Date:	17 Mar-09 02:28 PM	Material:	Marine Monitoring Sample	Project: Douglas Harbor
Receive Date:	17 Mar-09 02:28 PM	Source:	Douglas Harbor	
Sample Age:	N/A	Station:	Area 2	
Comments: Area 2				

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
Combined Proportion Normal	Comparison	15-7723-1824	15-7723-1824	17 Mar-09 2:52 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Dunnett's Multiple Comparison	C > T	Angular (Corrected)		50	100	2	70.7107	7.14%

Group Comparisons							
Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Water		1	-1.4491	2.30451	0.9929	0.12329	Non-Significant Effect
		10	0.38073	2.30451	0.6555	0.12329	Non-Significant Effect
		50	1.12587	2.30451	0.3291	0.12329	Non-Significant Effect
		100	12.5574	2.30451	0.0000	0.12329	Significant Effect

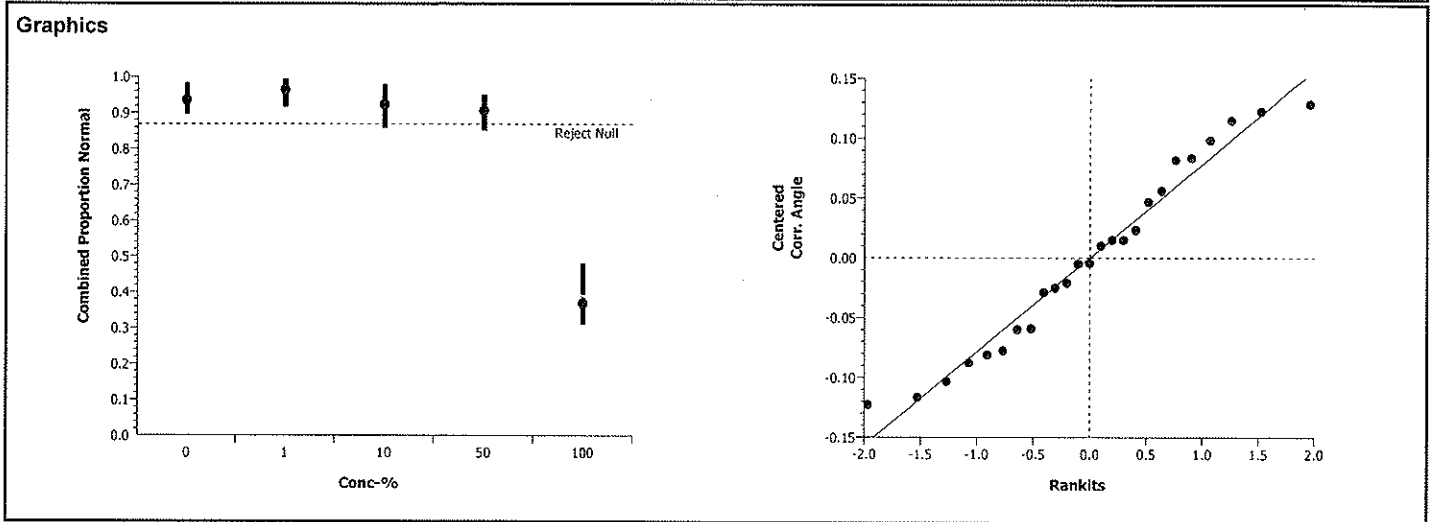
ANOVA Table						
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	1.851335	0.4628338	4	64.69	0.00000	Significant Effect
Error	0.1430997	0.007155	20			
Total	1.99443495	0.4699888	24			

ANOVA Assumptions					
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Bartlett	1.49534	13.27670	0.82747	Equal Variances
Distribution	Shapiro-Wilk W	0.95660		0.35085	Normal Distribution

Data Summary										
Conc-%	Control Type	Count	Original Data				Transformed Data			
			Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Water	5	0.93525	0.89556	0.98433	0.03510	1.32294	1.24172	1.44530	0.08007
1		5	0.96301	0.91645	0.99478	0.03810	1.40046	1.27756	1.49847	0.10520
10		5	0.92301	0.85901	0.98058	0.05012	1.30257	1.18587	1.43099	0.09919
50		5	0.90548	0.85117	0.95039	0.03662	1.26270	1.17474	1.34618	0.06282
100		5	0.36815	0.31070	0.48042	0.06556	0.65114	0.59126	0.76581	0.06717

CETIS Analysis Detail

Data Detail											
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	0.90862	0.98433	0.95039	0.89556	0.93734					
1		0.99217	0.91645	0.92689	0.99478	0.98477					
10		0.85901	0.95561	0.88512	0.98058	0.93473					
50		0.91645	0.95039	0.91645	0.85117	0.89295					
100		0.48042	0.36292	0.33943	0.34726	0.31070					



CETIS Data Worksheet

Page 1 of 1
 Report Date: 17 Mar-09 2:52 PM
 Link: 15-7723-1824

Mussel Shell Development Test NewFields

Start Date: 21 Dec-08 11:50 PM **Species:** Mytilis galloprovincialis **Sample Code:** 847893526
Ending Date: 24 Dec-08 01:45 AM **Protocol:** EPA-823-B-98-005 (1998) **Sample Source:** Douglas Harbor
Sample Date: 17 Mar-09 02:28 PM **Material:** Marine Monitoring Sample **Sample Station:** Area 2

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	B	1	25	383	339	339	329	
0	B	2	29	383	403	403	397	
0	B	3	2	383	349	349	345	
0	B	4	26	383	368	368	362	
0	B	5	14	383	357	357	350	
0	D	1	5	383	358	358	348	
0	D	2	33	383	385	385	377	
0	D	3	22	383	372	372	364	
0	D	4	9	383	348	348	343	
0	D	5	28	383	369	369	359	
0	R	1	3	383	361	361	349	
0	R	2	4	383	385	385	380	
0	R	3	16	383	391	391	384	
0	R	4	7	383	337	337	327	
0	R	5	13	383	301	301	298	
1		1	18	383	393	393	380	
1		2	21	383	360	360	351	
1		3	6	766	731	731	710	
1		4	34	383	389	389	381	
1		5	24	383	394	394	388	
10		1	15	383	333	333	329	
10		2	8	383	371	371	366	
10		3	19	383	346	346	339	
10		4	32	383	412	412	404	
10		5	10	383	365	365	358	
50		1	12	383	360	360	351	
50		2	30	383	366	366	364	
50		3	23	383	363	363	351	
50		4	20	383	336	336	326	
50		5	27	383	353	353	342	
100		1	17	383	375	375	184	
100		2	35	383	349	349	139	
100		3	11	383	348	348	130	
100		4	1	383	366	366	133	
100		5	31	383	330	330	119	

CETIS Test Summary

Report Date:

17 Mar-09 3:10 PM

Test Link:

04-2577-2376

Mussel Shell Development Test							NewFields	
Test No:	05-0157-5065	Test Type:	Development-Survival	Duration:	50h			
Start Date:	21 Dec-08 11:50 PM	Protocol:	EPA-823-B-98-005 (1998)	Species:	Mytilis galloprovincialis			
Ending Date:	24 Dec-08 01:45 AM	Dil Water:	Laboratory Seawater	Source:	Carlsbad Aquafarms			
Setup Date:	21 Dec-08 11:50 PM	Brine:	Not Applicable					
Sample No:	07-5233-7456	Code:	752337456	Client:	PND			
Sample Date:	17 Mar-09 03:05 PM	Material:	Marine Monitoring Sample	Project:	Douglas Harbor			
Receive Date:	17 Mar-09 03:05 PM	Source:	Douglas Harbor					
Sample Age:	N/A	Station:	Area 4a					
Comments:	Area 4a							
Comparison Summary								
Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method		
02-7456-2694	Combined Proportion Normal	50	100	70.7107	7.96%	Dunnett's Multiple Comparison		
Point Estimate Summary								
Analysis	Endpoint	% Effect	Conc-%	95% LCL	95% UCL	Method		
03-1740-9287	Combined Proportion Normal	50	74.64478	73.98119	75.31432	Trimmed Spearman-Kärber		
Combined Proportion Normal Summary								
Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Brine Reagent	5	0.92078	0.85901	0.98511	0.02121	0.04743	5.15%
0	Dilution Water	5	0.93525	0.89556	0.98433	0.01570	0.03510	3.75%
0	Receiving Wat	5	0.90347	0.77807	0.99217	0.04019	0.08987	9.95%
1		5	0.91384	0.86684	0.97389	0.01920	0.04294	4.70%
10		5	0.88064	0.83290	0.97500	0.02634	0.05890	6.69%
50		5	0.91973	0.85640	0.98496	0.02756	0.06163	6.70%
100		5	0.15091	0.11749	0.18277	0.01084	0.02424	16.06%
Combined Proportion Normal Detail								
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	Brine Reagent	0.85901	0.98511	0.90078	0.94517	0.91384		
0	Dilution Water	0.90862	0.98433	0.95039	0.89556	0.93734		
0	Receiving Wat	0.91123	0.99217	0.98210	0.85379	0.77807		
1		0.97389	0.86684	0.88251	0.93734	0.90862		
10		0.83290	0.97500	0.86684	0.83290	0.89556		
50		0.98496	0.97921	0.86162	0.85640	0.91645		
100		0.14099	0.16188	0.15144	0.11749	0.18277		

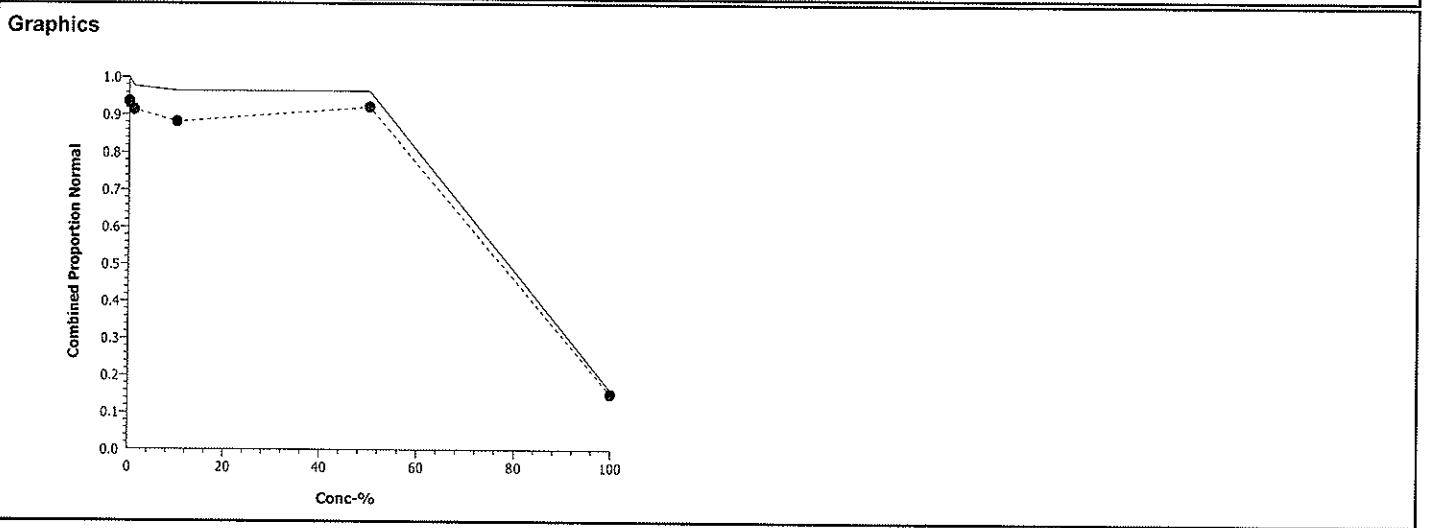
CETIS Analysis Detail

Mussel Shell Development Test			NewFields
Test No: 05-0157-5065	Test Type: Development-Survival	Duration: 50h	
Start Date: 21 Dec-08 11:50 PM	Protocol: EPA-823-B-98-005 (1998)	Species: Mytilus galloprovincialis	
Ending Date: 24 Dec-08 01:45 AM	Dil Water: Laboratory Seawater	Source: Carlsbad Aquafarms	
Setup Date: 21 Dec-08 11:50 PM	Brine: Not Applicable		
Sample No: 07-5233-7456	Code: 752337456	Client: PND	
Sample Date: 17 Mar-09 03:05 PM	Material: Marine Monitoring Sample	Project: Douglas Harbor	
Receive Date: 17 Mar-09 03:05 PM	Source: Douglas Harbor		
Sample Age: N/A	Station: Area 4a		
Comments: Area 4a			

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
Combined Proportion Normal	Trimmed Spearman-Karber	04-2577-2376	04-2577-2376	17 Mar-09 3:09 PM	CETISv1.1.2

Spearman-Karber Options					Point Estimates		
Threshold Option	Lower Threshold	Trim	Mu	Sigma	EC50/LC50	95% LCL	95% UCL
Control Threshold	0.06475196	16.14%	1.872999	0.001939056	74.64478	73.98119	75.31432

Data Summary			Calculated Variate(A/B)						
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B
0	Dilution Water	5	0.93525	0.89556	0.98433	0.00716	0.03510	1791	1915
1		5	0.91384	0.86684	0.97389	0.00877	0.04294	1750	1915
10		5	0.88064	0.83290	0.97500	0.01202	0.05890	1703	1932
50		5	0.91973	0.85640	0.98496	0.01258	0.06163	1826	1981
100		5	0.15091	0.11749	0.18277	0.00495	0.02424	289	1915



CETIS Analysis Detail

Mussel Shell Development Test			NewFields
Test No: 05-0157-5065	Test Type: Development-Survival	Duration: 50h	
Start Date: 21 Dec-08 11:50 PM	Protocol: EPA-823-B-98-005 (1998)	Species: Mytilus galloprovincialis	
Ending Date: 24 Dec-08 01:45 AM	Dil Water: Laboratory Seawater	Source: Carlsbad Aquafarms	
Setup Date: 21 Dec-08 11:50 PM	Brine: Not Applicable		
Sample No: 07-5233-7456	Code: 752337456	Client: PND	
Sample Date: 17 Mar-09 03:05 PM	Material: Marine Monitoring Sample	Project: Douglas Harbor	
Receive Date: 17 Mar-09 03:05 PM	Source: Douglas Harbor		
Sample Age: N/A	Station: Area 4a		
Comments: Area 4a			

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
Combined Proportion Normal	Comparison	04-2577-2376	04-2577-2376	17 Mar-09 3:09 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Dunnett's Multiple Comparison	C > T	Angular (Corrected)		50	100	2	70.7107	7.96%

Group Comparisons							
Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Water		1	0.7077	2.30451	0.5101	0.1345	Non-Significant Effect
		10	1.59116	2.30451	0.1736	0.1345	Non-Significant Effect
		50	0.3131	2.30451	0.6838	0.1345	Non-Significant Effect
		100	15.8468	2.30451	0.0000	0.1345	Significant Effect

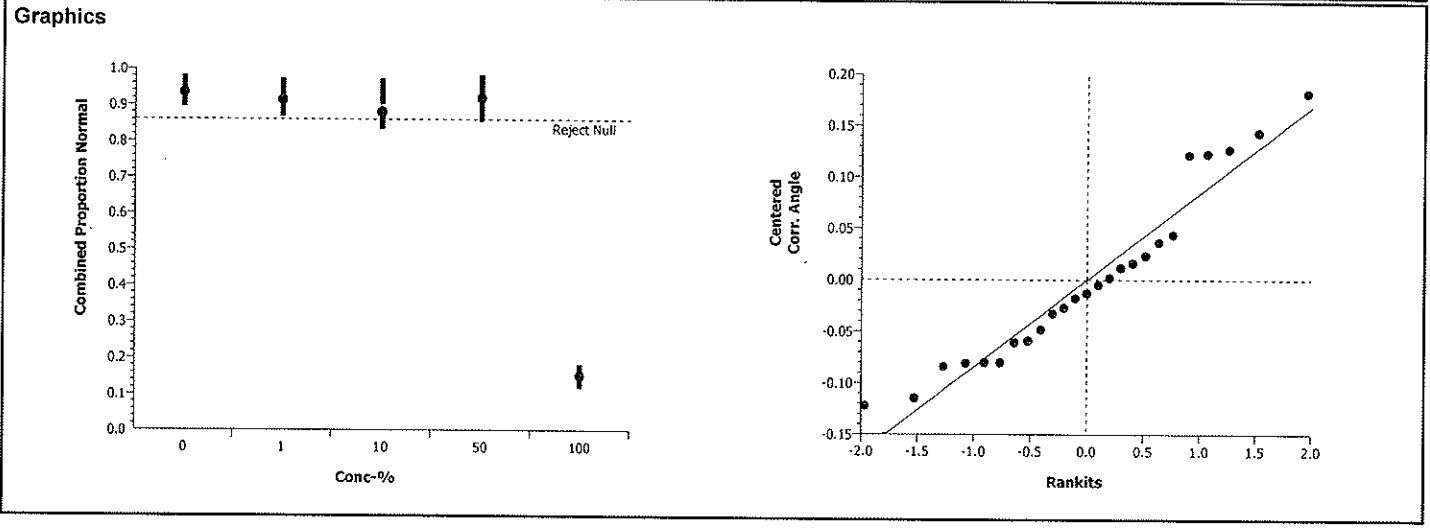
ANOVA Table						
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	3.169664	0.792416	4	93.05	0.00000	Significant Effect
Error	0.1703142	0.0085157	20			
Total	3.33997807	0.8009317	24			

ANOVA Assumptions					
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Bartlett	5.41244	13.27670	0.24753	Equal Variances
Distribution	Shapiro-Wilk W	0.93393		0.10716	Normal Distribution

Data Summary		Original Data					Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Water	5	0.93525	0.89556	0.98433	0.03510	1.32294	1.24172	1.44530	0.08007
1		5	0.91384	0.86684	0.97389	0.04294	1.28163	1.19726	1.40850	0.08445
10		5	0.88064	0.83290	0.97500	0.05890	1.23007	1.14968	1.41202	0.10868
50		5	0.91973	0.85640	0.98496	0.06163	1.30466	1.18213	1.44786	0.12672
100		5	0.15091	0.11749	0.18277	0.02424	0.39806	0.34987	0.44174	0.03414

CETIS Analysis Detail

Data Detail											
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	0.90862	0.98433	0.95039	0.89556	0.93734					
1		0.97389	0.86684	0.88251	0.93734	0.90862					
10		0.83290	0.97500	0.86684	0.83290	0.89556					
50		0.98496	0.97921	0.86162	0.85640	0.91645					
100		0.14099	0.16188	0.15144	0.11749	0.18277					



CETIS Data Worksheet

Mussel Shell Development Test NewFields

Start Date: 21 Dec-08 11:50 PM **Species:** Mytilis galloprovincialis **Sample Code:** 752337456
Ending Date: 24 Dec-08 01:45 AM **Protocol:** EPA-823-B-98-005 (1998) **Sample Source:** Douglas Harbor
Sample Date: 17 Mar-09 03:05 PM **Material:** Marine Monitoring Sample **Sample Station:** Area 4a

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	B	1	31	383	339	339	329	
0	B	2	28	383	403	403	397	
0	B	3	12	383	349	349	345	
0	B	4	6	383	368	368	362	
0	B	5	27	383	357	357	350	
0	D	1	25	383	358	358	348	
0	D	2	11	383	385	385	377	
0	D	3	22	383	372	372	364	
0	D	4	18	383	348	348	343	
0	D	5	23	383	369	369	359	
0	R	1	19	383	361	361	349	
0	R	2	35	383	385	385	380	
0	R	3	29	383	391	391	384	
0	R	4	5	383	337	337	327	
0	R	5	30	383	301	301	298	
1		1	14	383	377	377	373	
1		2	8	383	338	338	332	
1		3	20	383	342	342	338	
1		4	1	383	367	367	359	
1		5	21	383	356	356	348	
10		1	10	383	327	327	319	
10		2	32	383	400	400	390	
10		3	24	383	339	339	332	
10		4	17	383	325	325	319	
10		5	13	383	349	349	343	
50		1	3	383	399	399	393	
50		2	9	383	433	433	424	
50		3	15	383	334	334	330	
50		4	2	383	332	332	328	
50		5	26	383	359	359	351	
100		1	33	383	315	315	54	
100		2	4	383	346	346	62	
100		3	34	383	340	340	58	
100		4	16	383	344	344	45	
100		5	7	383	326	326	70	

Report Date:
Test Link:

17 Mar-09 3:12 PM
04-5579-8349

CETIS Test Summary

Mussel Shell Development Test							NewFields	
Test No:	05-0157-5065	Test Type:	Development-Survival	Duration:	50h			
Start Date:	21 Dec-08 11:50 PM	Protocol:	EPA-823-B-98-005 (1998)	Species:	Mytilus galloprovincialis			
Ending Date:	24 Dec-08 01:45 AM	Dil Water:	Laboratory Seawater	Source:	Carlsbad Aquafarms			
Setup Date:	21 Dec-08 11:50 PM	Brine:	Not Applicable					
Sample No:	10-9051-7253	Code:	1090517253	Client:	PND			
Sample Date:	17 Mar-09 02:29 PM	Material:	Marine Monitoring Sample	Project:	Douglas Harbor			
Receive Date:	17 Mar-09 02:29 PM	Source:	Douglas Harbor					
Sample Age:	N/A		Station:	Area 4b				
Comparison Summary								
Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method		
01-8298-7744	Combined Proportion Normal	10	50	22.3607	7.76%	Dunnett's Multiple Comparison		
Point Estimate Summary								
Analysis	Endpoint	% Effect	Conc-%	95% LCL	95% UCL	Method		
10-5795-0287	Combined Proportion Normal	50	42.19223	40.93087	43.49247	Trimmed Spearman-Karber		
Combined Proportion Normal Summary								
Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Brine Reagent	5	0.93525	0.89556	0.98433	0.01570	0.03510	3.75%
0	Dilution Water	5	0.92078	0.85901	0.98511	0.02121	0.04743	5.15%
0	Receiving Wat	5	0.90347	0.77807	0.99217	0.04019	0.08987	9.95%
1		5	0.93995	0.87206	0.97650	0.01773	0.03964	4.22%
10		5	0.89788	0.84595	0.97767	0.02291	0.05123	5.71%
50		5	0.56762	0.46736	0.66319	0.03509	0.07847	13.82%
100		5	0.00000	0.00000	0.00000	0.00000	0.00000	0.00%
Combined Proportion Normal Detail								
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5		
0	Brine Reagent	0.90862	0.98433	0.95039	0.89556	0.93734		
0	Dilution Water	0.85901	0.98511	0.90078	0.94517	0.91384		
0	Receiving Wat	0.91123	0.99217	0.98210	0.85379	0.77807		
1		0.87206	0.97650	0.94778	0.95300	0.95039		
10		0.90862	0.89556	0.84595	0.97767	0.86162		
50		0.66319	0.52480	0.62663	0.46736	0.55614		
100		0.00000	0.00000	0.00000	0.00000	0.00000		

CETIS Analysis Detail

Mussel Shell Development Test NewFields

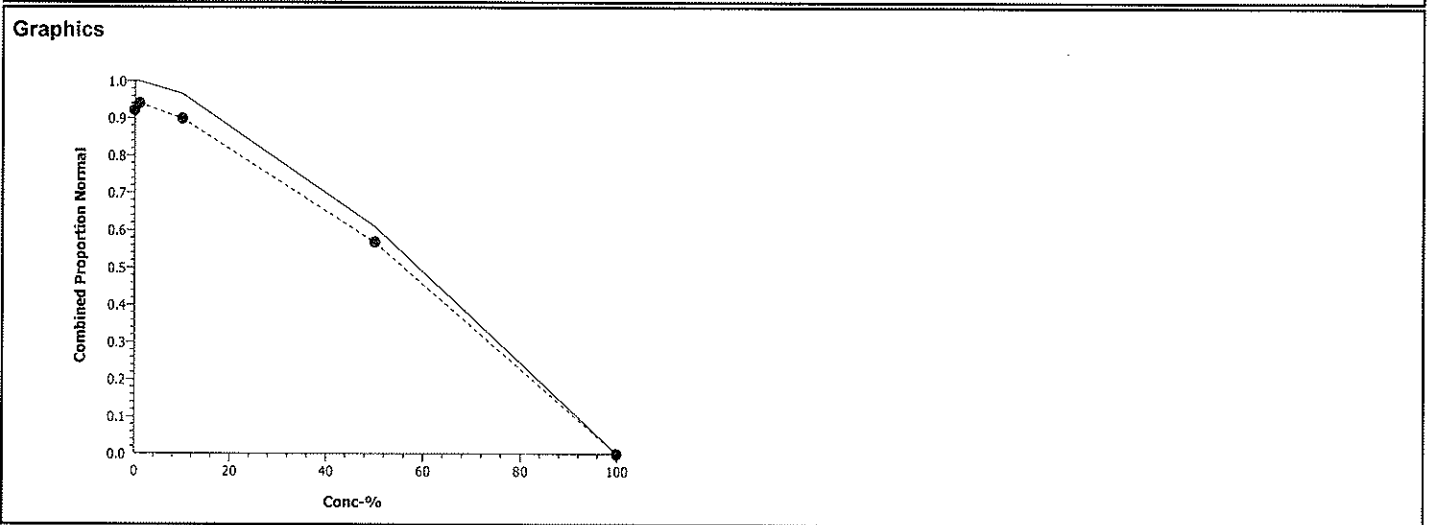
Test No: 05-0157-5065	Test Type: Development-Survival	Duration: 50h
Start Date: 21 Dec-08 11:50 PM	Protocol: EPA-823-B-98-005 (1998)	Species: Mytilus galloprovincialis
Ending Date: 24 Dec-08 01:45 AM	Dil Water: Laboratory Seawater	Source: Carlsbad Aquafarms
Setup Date: 21 Dec-08 11:50 PM	Brine: Not Applicable	

Sample No: 10-9051-7253	Code: 1090517253	Client: PND
Sample Date: 17 Mar-09 02:29 PM	Material: Marine Monitoring Sample	Project: Douglas Harbor
Receive Date: 17 Mar-09 02:29 PM	Source: Douglas Harbor	
Sample Age: N/A	Station: Area 4b	

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
Combined Proportion Normal	Trimmed Spearman-Karber	04-5579-8349	04-5579-8349	17 Mar-09 3:12 PM	CETISv1.1.2

Spearman-Karber Options					Point Estimates		
Threshold Option	Lower Threshold	Trim	Mu	Sigma	EC50/LC50	95% LCL	95% UCL
Control Threshold	0.07855297	0.00%	1.625233	0.006590767	42.19223	40.93087	43.49247

Data Summary		Calculated Variate(A/B)							
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B
0	Dilution Water	5	0.92078	0.85901	0.98511	0.00968	0.04743	1783	1935
1		5	0.93995	0.87206	0.97650	0.00809	0.03964	1800	1915
10		5	0.89788	0.84595	0.97767	0.01046	0.05123	1739	1935
50		5	0.56762	0.46736	0.66319	0.01602	0.07847	1087	1915
100		5	0.00000	0.00000	0.00000	0.00000	0.00000	0	1915

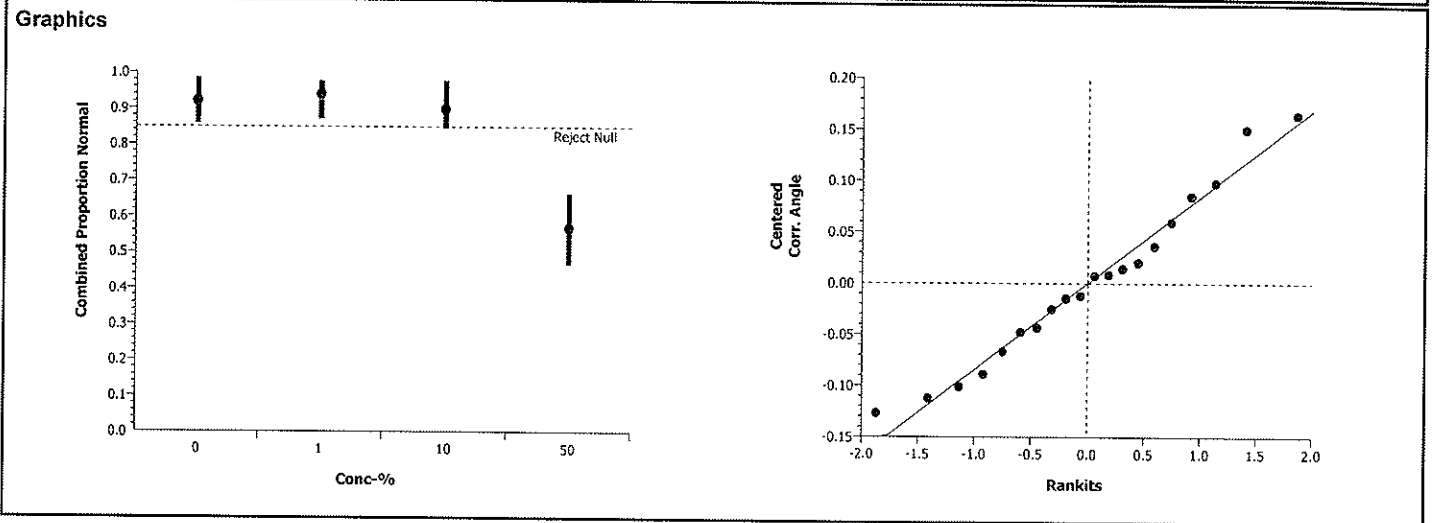


CETIS Analysis Detail

Mussel Shell Development Test							NewFields			
Test No:	05-0157-5065	Test Type:	Development-Survival	Duration:	50h					
Start Date:	21 Dec-08 11:50 PM	Protocol:	EPA-823-B-98-005 (1998)	Species:	Mytilis galloprovincialis					
Ending Date:	24 Dec-08 01:45 AM	Dil Water:	Laboratory Seawater	Source:	Carlsbad Aquafarms					
Setup Date:	21 Dec-08 11:50 PM	Brine:	Not Applicable							
Sample No:	10-9051-7253	Code:	1090517253	Client:	PND					
Sample Date:	17 Mar-09 02:29 PM	Material:	Marine Monitoring Sample	Project:	Douglas Harbor					
Receive Date:	17 Mar-09 02:29 PM	Source:	Douglas Harbor							
Sample Age:	N/A	Station:	Area 4b							
Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version					
Combined Proportion Normal	Comparison	04-5579-8349	04-5579-8349	17 Mar-09 3:12 PM	CETISv1.1.2					
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD		
Dunnell's Multiple Comparison	C > T	Angular (Corrected)		10	50	10	22.3607	7.76%		
Group Comparisons										
Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)			
Dilution Water		1	-0.5949	2.22713	0.9096	0.12623	Non-Significant Effect			
		10	0.73645	2.22713	0.4407	0.12623	Non-Significant Effect			
		50	7.84178	2.22713	0.0000	0.12623	Significant Effect			
ANOVA Table										
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)				
Between	0.7462328	0.2487443	3	30.97	0.00000	Significant Effect				
Error	0.1285052	0.0080316	16							
Total	0.87473796	0.2567759	19							
ANOVA Assumptions										
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)					
Variances	Bartlett	0.40069	11.34487	0.94010	Equal Variances					
Distribution	Shapiro-Wilk W	0.96728		0.69677	Normal Distribution					
Data Summary										
			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Water	5	0.92078	0.85901	0.98511	0.04743	1.29840	1.18587	1.44847	0.09930
1		5	0.93995	0.87206	0.97650	0.03964	1.33212	1.20501	1.41690	0.07748
10		5	0.89788	0.84595	0.97767	0.05123	1.25666	1.16746	1.42079	0.09958
50		5	0.56762	0.46736	0.66319	0.07847	0.85393	0.75274	0.95163	0.07967

CETIS Analysis Detail

Data Detail											
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	0.85901	0.98511	0.90078	0.94517	0.91384					
1		0.87206	0.97650	0.94778	0.95300	0.95039					
10		0.90862	0.89556	0.84595	0.97767	0.86162					
50		0.66319	0.52480	0.62663	0.46736	0.55614					



CETIS Data Worksheet

Mussel Shell Development Test NewFields

Start Date: 21 Dec-08 11:50 PM **Species:** Mytilis galloprovincialis **Sample Code:** 1090517253
Ending Date: 24 Dec-08 01:45 AM **Protocol:** EPA-823-B-98-005 (1998) **Sample Source:** Douglas Harbor
Sample Date: 17 Mar-09 02:29 PM **Material:** Marine Monitoring Sample **Sample Station:** Area 4b

Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	B	1	19	383	358	358	348	
0	B	2	24	383	385	385	377	
0	B	3	5	383	372	372	364	
0	B	4	4	383	348	348	343	
0	B	5	21	383	369	369	359	
0	D	1	14	383	339	339	329	
0	D	2	34	383	403	403	397	
0	D	3	10	383	349	349	345	
0	D	4	28	383	368	368	362	
0	D	5	22	383	357	357	350	
0	R	1	32	383	361	361	349	
0	R	2	29	383	385	385	380	
0	R	3	7	383	391	391	384	
0	R	4	25	383	337	337	327	
0	R	5	18	383	301	301	298	
1		1	17	383	337	337	334	
1		2	9	383	386	386	374	
1		3	20	383	365	365	363	
1		4	1	383	369	369	365	
1		5	12	383	371	371	364	
10		1	23	383	356	356	348	
10		2	15	383	352	352	343	
10		3	31	383	333	333	324	
10		4	3	383	403	403	394	
10		5	16	383	335	335	330	
50		1	35	383	366	366	254	
50		2	8	383	341	341	201	
50		3	26	383	354	354	240	
50		4	27	383	316	316	179	
50		5	33	383	373	373	213	
100		1	2	383	359	359	0	
100		2	6	383	370	370	0	
100		3	11	383	335	335	0	
100		4	30	383	336	336	0	
100		5	13	383	366	366	0	

CETIS Test Summary

Report Date:

17 Mar-09 3:18 PM

Test Link:

14-8784-7431

Mussel Shell Development Test			NewFields
Test No:	05-0157-5065	Test Type:	Development-Survival
Start Date:	21 Dec-08 11:50 PM	Protocol:	EPA-823-B-98-005 (1998)
Ending Date:	24 Dec-08 01:45 AM	Dil Water:	Laboratory Seawater
Setup Date:	21 Dec-08 11:50 PM	Brine:	Not Applicable
Duration:	50h		
Species:	Mytilis galloprovincialis		
Source:	Carlsbad Aquafarms		
Sample No:	17-9228-0347	Code:	1792280347
Sample Date:	17 Mar-09 03:14 PM	Material:	Marine Monitoring Sample
Receive Date:	17 Mar-09 03:14 PM	Source:	Douglas Harbor
Sample Age:	N/A	Station:	Lower Comp
Client:	PND		
Project:	Douglas Harbor		
Comments:	Lower Comp		

Comparison Summary						
Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method
08-9575-2313	Combined Proportion Normal	100	> 100	N/A	9.19%	Dunnett's Multiple Comparison

Point Estimate Summary						
Analysis	Endpoint	% Effect	Conc-%	95% LCL	95% UCL	Method
03-7062-9664	Combined Proportion Normal	5	> 100	N/A	N/A	Linear Interpolation
		10	> 100	N/A	N/A	
		15	> 100	N/A	N/A	
		20	> 100	N/A	N/A	
		25	> 100	N/A	N/A	
		40	> 100	N/A	N/A	
		50	> 100	N/A	N/A	

Combined Proportion Normal Summary								
Conc-%	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Brine Reagent	5	0.92078	0.85901	0.98511	0.02121	0.04743	5.15%
0	Dilution Water	5	0.93525	0.89556	0.98433	0.01570	0.03510	3.75%
0	Receiving Wat	5	0.90347	0.77807	0.99217	0.04019	0.08987	9.95%
1		5	0.94289	0.89817	0.98077	0.01536	0.03434	3.64%
10		5	0.90131	0.79634	0.97128	0.02859	0.06394	7.09%
50		5	0.89077	0.77546	0.97978	0.03965	0.08867	9.95%
100		5	0.91227	0.85379	0.95561	0.01816	0.04060	4.45%

Combined Proportion Normal Detail						
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Brine Reagent	0.85901	0.98511	0.90078	0.94517	0.91384
0	Dilution Water	0.90862	0.98433	0.95039	0.89556	0.93734
0	Receiving Wat	0.91123	0.99217	0.98210	0.85379	0.77807
1		0.95561	0.98077	0.89817	0.96345	0.91645
10		0.90862	0.91645	0.79634	0.91384	0.97128
50		0.77546	0.97800	0.87990	0.97978	0.84073
100		0.90862	0.95561	0.85379	0.94517	0.89817

CETIS Analysis Detail

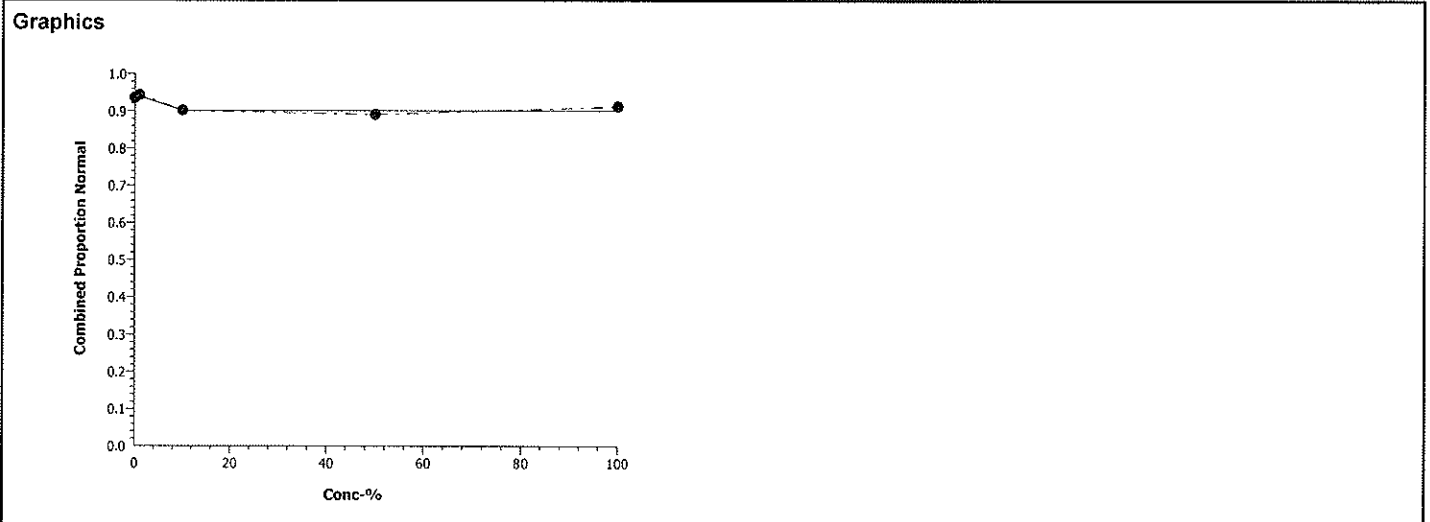
Mussel Shell Development Test			NewFields
Test No: 05-0157-5065	Test Type: Development-Survival	Duration: 50h	
Start Date: 21 Dec-08 11:50 PM	Protocol: EPA-823-B-98-005 (1998)	Species: Mytilus galloprovincialis	
Ending Date: 24 Dec-08 01:45 AM	Dil Water: Laboratory Seawater	Source: Carlsbad Aquafarms	
Setup Date: 21 Dec-08 11:50 PM	Brine: Not Applicable		
Sample No: 17-9228-0347	Code: 1792280347	Client: PND	
Sample Date: 17 Mar-09 03:14 PM	Material: Marine Monitoring Sample	Project: Douglas Harbor	
Receive Date: 17 Mar-09 03:14 PM	Source: Douglas Harbor		
Sample Age: N/A	Station: Lower Comp		
Comments: Lower Comp			

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
Combined Proportion Normal	Linear Interpolation	14-8784-7431	14-8784-7431	17 Mar-09 3:18 PM	CETISv1.1.2

Linear Interpolation Options					
X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X + 1)	Linear	57951	200	Yes	Two-Point Interpolation

Point Estimates			
% Effect	Conc-%	95% LCL	95% UCL
5	> 100	N/A	N/A
10	> 100	N/A	N/A
15	> 100	N/A	N/A
20	> 100	N/A	N/A
25	> 100	N/A	N/A
40	> 100	N/A	N/A
50	> 100	N/A	N/A

Data Summary		Calculated Variate(A/B)							
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B
0	Dilution Water	5	0.93525	0.89556	0.98433	0.00716	0.03510	1791	1915
1		5	0.94289	0.89817	0.98077	0.00701	0.03434	1838	1948
10		5	0.90131	0.79634	0.97128	0.01305	0.06394	1726	1915
50		5	0.89077	0.77546	0.97978	0.01810	0.08867	1792	2003
100		5	0.91227	0.85379	0.95561	0.00829	0.04060	1747	1915

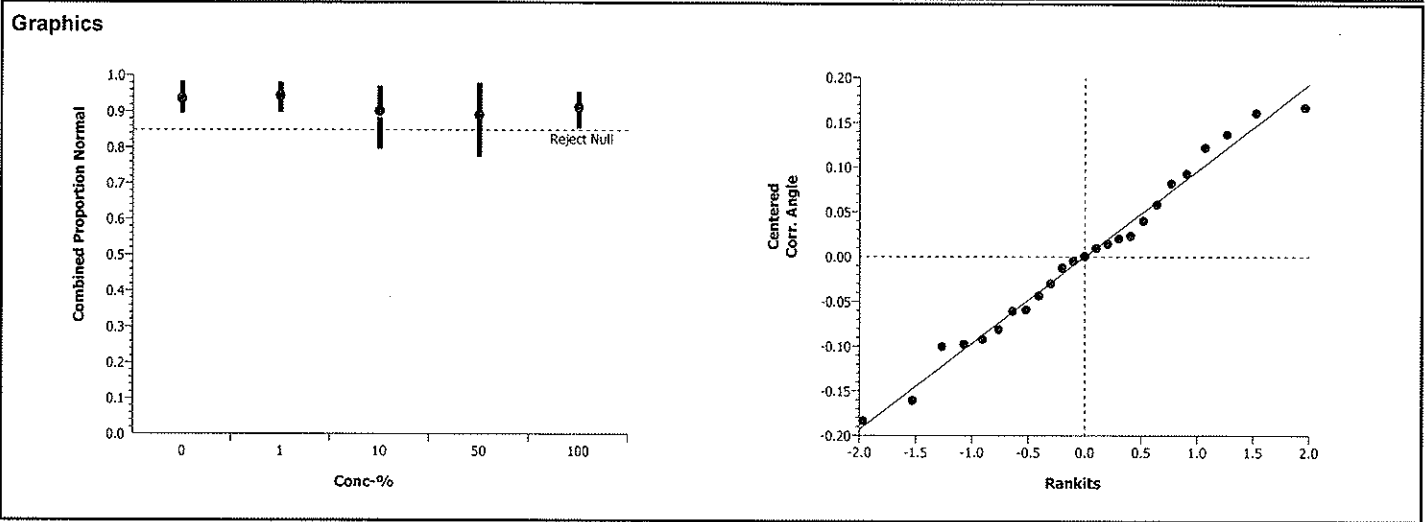


CETIS Analysis Detail

Mussel Shell Development Test										NewFields
Test No:	05-0157-5065		Test Type:	Development-Survival			Duration:	50h		
Start Date:	21 Dec-08 11:50 PM		Protocol:	EPA-823-B-98-005 (1998)			Species:	Mytilus galloprovincialis		
Ending Date:	24 Dec-08 01:45 AM		Dil Water:	Laboratory Seawater			Source:	Carlsbad Aquafarms		
Setup Date:	21 Dec-08 11:50 PM		Brine:	Not Applicable						
Sample No:	17-9228-0347		Code:	1792280347			Client:	PND		
Sample Date:	17 Mar-09 03:14 PM		Material:	Marine Monitoring Sample			Project:	Douglas Harbor		
Receive Date:	17 Mar-09 03:14 PM		Source:	Douglas Harbor						
Sample Age:	N/A		Station:	Lower Comp						
Comments:	Lower Comp									
Endpoint	Analysis Type		Sample Link	Control Link	Date Analyzed	Version				
Combined Proportion Normal	Comparison		14-8784-7431	14-8784-7431	17 Mar-09 3:18 PM	CETISv1.1.2				
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD		
Dunnett's Multiple Comparison	C > T	Angular (Corrected)		100	>100	1	N/A	9.19%		
Group Comparisons										
Control	vs	Conc-%	Statistic	Critical	P-Value	MSD	Decision(0.05)			
Dilution Water		1	-0.2369	2.30451	0.8678	0.15078	Non-Significant Effect			
		10	0.90924	2.30451	0.4199	0.15078	Non-Significant Effect			
		50	0.94875	2.30451	0.4027	0.15078	Non-Significant Effect			
		100	0.714	2.30451	0.5072	0.15078	Non-Significant Effect			
ANOVA Table										
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)				
Between	0.0257343	0.0064336	4	0.60	0.66617	Non-Significant Effect				
Error	0.2140455	0.0107023	20							
Total	0.23977976	0.0171358	24							
ANOVA Assumptions										
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)					
Variances	Bartlett	3.50450	13.27670	0.47719	Equal Variances					
Distribution	Shapiro-Wilk W	0.97889		0.86235	Normal Distribution					
Data Summary										
			Original Data				Transformed Data			
Conc-%	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Water	5	0.93525	0.89556	0.98433	0.03510	1.32294	1.24172	1.44530	0.08007
1		5	0.94289	0.89817	0.98077	0.03434	1.33844	1.24601	1.43167	0.07574
10		5	0.90131	0.79634	0.97128	0.06394	1.26345	1.10259	1.40050	0.10600
50		5	0.89077	0.77546	0.97978	0.08867	1.26086	1.07713	1.42810	0.15789
100		5	0.91227	0.85379	0.95561	0.04060	1.27622	1.17843	1.35852	0.07211

CETIS Analysis Detail

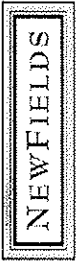
Data Detail											
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	0.90862	0.98433	0.95039	0.89556	0.93734					
1		0.95561	0.98077	0.89817	0.96345	0.91645					
10		0.90862	0.91645	0.79634	0.91384	0.97128					
50		0.77546	0.97800	0.87990	0.97978	0.84073					
100		0.90862	0.95561	0.85379	0.94517	0.89817					



CETIS Data Worksheet

 Report Date: 17 Mar-09 3:18 PM
 Link: 14-8784-7431

Mussel Shell Development Test								NewFields
Start Date:	21 Dec-08 11:50 PM		Species:	Mytilus galloprovincialis		Sample Code:	1792280347	
Ending Date:	24 Dec-08 01:45 AM		Protocol:	EPA-823-B-98-005 (1998)		Sample Source:	Douglas Harbor	
Sample Date:	17 Mar-09 03:14 PM		Material:	Marine Monitoring Sample		Sample Station:	Lower Comp	
Conc-%	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	B	1	14	383	339	339	329	
0	B	2	6	383	403	403	397	
0	B	3	13	383	349	349	345	
0	B	4	11	383	368	368	362	
0	B	5	7	383	357	357	350	
0	D	1	24	383	358	358	348	
0	D	2	25	383	385	385	377	
0	D	3	16	383	372	372	364	
0	D	4	28	383	348	348	343	
0	D	5	31	383	369	369	359	
0	R	1	29	383	361	361	349	
0	R	2	18	383	385	385	380	
0	R	3	35	383	391	391	384	
0	R	4	26	383	337	337	327	
0	R	5	2	383	301	301	298	
1		1	21	383	373	373	366	
1		2	17	383	416	416	408	
1		3	9	383	350	350	344	
1		4	3	383	377	377	369	
1		5	8	383	354	354	351	
10		1	27	383	358	358	348	
10		2	12	383	361	361	351	
10		3	23	383	311	311	305	
10		4	19	383	356	356	350	
10		5	10	383	381	381	372	
50		1	4	383	304	304	297	
50		2	20	383	409	409	400	
50		3	30	383	344	344	337	
50		4	22	383	445	445	436	
50		5	33	383	326	326	322	
100		1	32	383	353	353	348	
100		2	34	383	371	371	366	
100		3	5	383	331	331	327	
100		4	15	383	366	366	362	
100		5	1	383	354	354	344	



LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE PHASE TEST WQ DATA SHEET

CLIENT PND NEWFIELDS JOB NUMBER 1414-001-860	PROJECT Douglas Harbor PROJECT MANAGER Brian Hester	SPECIES mytilus sp.	NEWFIELDS LABORATORY Port Gamble Incubator	PROTOCOL USEPA/USACE 1998
TEST START DATE 21Dec08		TIME 2350	TEST END DATE 23Dec08	TIME 0145
DILUTION WATER BATCH FSW122108.02		TEMP Recorder (HOBO)# na		

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	CONCENTRATION		DAY	TEMPERATURE (°C)		DO (mg/L)		SALINITY (ppt)		pH (units)		AMMONIA		Sulfides		Date	Tech
	value	units		meter	°C	meter	ppt	meter	unit	meter	unit	AMMONIA		Sulfides			
												Techn.	mg/L	Techn.	mg/L		
Control / .			0	16.26 ± 1	3	8.7	3	31	3	7.5						12/21/08	BA
			1		3	7.7	3	31	3	8.0						12/22	BA
		0%	2		3	7.0	3	31	3	7.9	CR					12/23	CR
			3														
			4														
Brine Control /			0		3	7.4	3	31	3	7.6						12/21/08	BA
			1		3	7.6	3	31	3	8.0						12/22	BA
		0%	2		3	7.2	3	31	3	7.9	CR					12/23	BA
			3														
			4														
Site Water Control /			0		3	8.9	3	31	3	7.6						12/21	BA
			1		3	7.7	3	31	3	8.0						12/22	BA
		0%	2		3	7.1	3	31	3	7.9	CR					12/23	BA
			3														
			4														



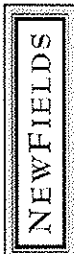
LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE PHASE TEST
WQ DATA SHEET

CLIENT	PROJECT	SPECIES	NEWFIELDS LABORATORY	PROTOCOL
PND	Douglas Harbor	mytilus sp.	Port Gamble Incubator	USEPA/USACE 1998
NEWFIELDS JOB NUMBER	PROJECT MANAGER	TEST START DATE	TEST END DATE	TIME
1414-001-860	Brian Hester	21Dec08	23Dec08	
		DILUTION WATER BATCH	TEMP Recorder (HOBO)#	
		FSW122108.02		na

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	CONCENTRATION		DAY	DO (mg/L)		TEMPERATURE (°C)		SALINITY (ppt)		pH (units)		AMMONIA		Sulfides				
	value	units		≥ 4.0		20 ± 1		32 ± 2		8.0 ± 1		AMMONIA		Sulfides				
				meter	mg/L	meter	°C	meter	ppt	meter	unit	Techn.	mg/L	Techn.	mg/L			
Area 1 / .			0	3	8.2	3	15.2	3	30	3	7.6					12/21	BH	
			1	3	7.7	3	17.2	3	31	3	8.0					12/22	✓	
		1 %	2	3	7.0	3	16.7	3	31	3	8.0					12-23	SP	
			3															
			4															
Area 1 / .			0	3	8.4	3	15.1	3	31	3	7.7					12/21	BH	
			1	3	7.6	3	17.1	3	31	3	8.0					12/22	✓	
		10 %	2	3	7.2	3	16.7	3	31	3	8.0	CR	40.5			12-23	PP	
			3															
			4															
Area 1 / .			0	3	8.0	3	15.2	3	30	3	7.9					12/21	BH	
			1	3	7.6	3	17.2	3	31	3	8.1					12/22	✓	
		50 %	2	3	7.2	3	16.9	3	31	3	8.1	CR	1.01			12-23	SP	
			3															
			4															

① M.C. D.P. 12-23-08

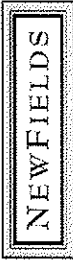


LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE PHASE TEST WQ DATA SHEET

CLIENT PND NEWFIELDS JOB NUMBER 1414-001-860	PROJECT Douglas Harbor PROJECT MANAGER Brian Hester	SPECIES mytilus sp. TEST START DATE 21Dec08 DILUTION WATER BATCH FSW122108.02	NEWFIELDS LABORATORY Port Gamble Incubator TEST END DATE 23Dec08 TEMP Recorder (HOB0)# na	PROTOCOL USEPA/USACE 1998
---	--	--	--	------------------------------

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	CONCENTRATION value	units	DAY	DO (mg/L)		TEMPERATURE (°C)		SALINITY (ppt)		pH (units)		AMMONIA		Sulfides	
				meter	mg/L	meter	°C	meter	ppt	meter	unit	Techn.	mg/L	Techn.	mg/L
				≥ 4.0		20 ± 1		32 ± 2		8.0 ± 1					
Area 1 /			0	3	7.6	3	16.0	3	30	3	8.0			BH	0.011
			1	3	7.6	3	17.2	3	30	3	8.2				
		100 %	2	3	7.1	3	16.8	3	30	3	8.1	CR	2.76		
			3												
			4												
Area 2 /			0	3	8.3	3	15.5	3	30	3	7.9			BH	
			1	3	7.7	3	17.1	3	31	3	8.1				
		1 %	2	3	7.1	3	16.6	3	31	3	8.2				
			3												
			4												
Area 2 /			0	3	8.3	3	15.2	3	30	3	7.8			BH	
			1	3	7.8	3	16.9	3	31	3	8.1				
		10 %	2	3	7.3	3	16.4	3	31	3	8.1	CR	<0.5		
			3												
			4												



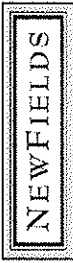
LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE PHASE TEST
WQ DATA SHEET

CLIENT	PROJECT	SPECIES	NEWFIELDS LABORATORY	PROTOCOL
PND	Douglas Harbor	mytilus sp.	Port Gamble Incubator	USEPA/USACE 1998
NEWFIELDS JOB NUMBER	PROJECT MANAGER	TEST START DATE	TEST END DATE	TIME
1414-001-860	Brian Hester	21Dec08	23Dec08	
DILUTION WATER BATCH		TEMP Recorder (HOBO)#		
FSW122108.02		na		

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	CONCENTRATION		DAY	TEMPERATURE (°C)		SALINITY (ppt)		pH (units)		Ammonia		Sulfides	
	value	units		meter	°C	meter	ppt	meter	unit	Techn.	mg/L	Techn.	mg/L
	Test conditions			DO (mg/L)		TEMPERATURE (°C)		SALINITY (ppt)		pH (units)		Ammonia	
Area 2 /			0	3	7.9	3	30	3	8.0				
			1	3	7.6	3	31	3	8.2				
		50 %	2	3	7.1	3	31	3	8.1	UR	1.32		
			3										
			4										
Area 2 /			0	3	7.6	3	30	3	8.2			BH 0.017	
			1	3	7.5	3	30	3	8.3				
		100 %	2	3	7.1	3	30	3	8.2	UR	2.85		
			3										
			4										
Area 4A /			0	3	8.4	3	30	3	7.9				BH
			1	3	7.1	3	31	3	8.0				
		1 %	2	3	6.9	3	31	3	7.9				AP
			3										
			4										

① Temp out of range lowered temp on Incubator 12/22/08



LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE PHASE TEST WQ DATA SHEET

CLIENT PND NEWFIELDS JOB NUMBER 1414-001-860	PROJECT Douglas Harbor PROJECT MANAGER Brian Hester	SPECIES mytilus sp.	NEWFIELDS LABORATORY Port Gamble Incubator
DILUTION WATER BATCH FSW122108.02		TEST START DATE 21Dec08	TEST END DATE 23Dec08
TEMP Recorder (HOB0)# na		PROTOCOL USEPA/USACE 1998	

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	CONCENTRATION value	DAY units	DO (mg/L)		TEMPERATURE (°C)		SALINITY (ppt)		pH (units)		AMMONIA		Sulfides			
			≥ 4.0		20 ± 1		32 ± 2		8.0 ± 1		mg/L		mg/L			
			meter	mg/L	meter	°C	meter	ppt	meter	unit	Techn.	mg/L	Techn.	mg/L	Techn.	mg/L
Area 4A / .	10 %	0	3	8.3	3	15.2	3	31	3	7.9					12/21	BH
		1	3	7.1	3	18.6 ⁰⁴	3	32	3	8.0					12/22	J
		2	3	6.6	3	18.2	3	31	3	8.0	CR	<0.5			12-23	OP
		3														
Area 4A / .	50 %	0	3	8.0	3	15.3	3	31	3	8.0					12/21	BH
		1	3	6.9	3	20.4 ⁰⁴	3	31	3	8.2					12/22	J
		2	3	6.7	3	19.2	3	31	3	8.1	CR	1.43			12-23	OP
		3														
Area 4A / .	100 %	0	3	7.6	3	15.6 ⁰⁴	3	30	3	8.2					12/21	BH
		1	3	7.3	3	18.4 ⁰⁴	3	31	3	8.3					12/22	J
		2	3	6.6	3	17.9	3	31	3	8.2	CR	3.91			12/23	OP
		3														
4																

Temp out of range lowered temp on incubator



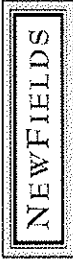
LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE PHASE TEST WQ DATA SHEET

CLIENT PND NEWFIELDS JOB NUMBER 1414-001-860	PROJECT Douglas Harbor PROJECT MANAGER Brian Hester	SPECIES mytilus sp.	NEWFIELDS LABORATORY Port Gamble Incubator
		TEST START DATE 21Dec08	TEST END DATE 23Dec08
		DILUTION WATER BATCH FSW122108.02	TEMP Recorder (HOB0)# na
		PROTOCOL USEPA/USACE 1998	

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	CONCENTRATION value	DAY	DO (mg/L)		TEMPERATURE (°C)		SALINITY (ppt)		pH (units)		AMMONIA		Sulfides				
			≥ 4.0		20 ± 1		32 ± 2		8.0 ± 1		mg/L		mg/L				
			meter	mg/L	meter	°C	meter	ppt	meter	unit	Techn.	mg/L	Techn.	mg/L	Techn.	mg/L	
Area 4B / .	1 %	0	3	8.2	3	15.2	3	30	3	7.9					12/21	BL	
		1	3	7.1	3	18.5 ⁰⁺	3	31	3	8.1					12/22	✓	
		2	3	7.0	3	18.0	3	31	3	8.2					12/23	✓	
		3															
		4															
Area 4B / .	10 %	0	3	8.2	3	15.3	3	31	3	7.9					12/21	BL	
		1	3	6.9	3	19.8 ⁰⁺	3	31	3	8.1					12/22	✓	
		2	3	6.6	3	19.1	3	31	3	8.1	CR	40.5			12/23	✓	
		3															
		4															
Area 4B / .	50 %	0	3	7.9	3	15.1	3	30	3	8.1					12/21	BL	
		1	3	6.9	3	18.3	3	31	3	8.2					12/22	✓	
		2	3	6.9	3	17.7	3	31	3	8.2	CR	2.29			12-23	✓	
		3															
		4															

(Temp out of range lowered temp on Incubator 12/22/08 ✓)



LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE PHASE TEST WQ DATA SHEET

CLIENT PND NEWFIELDS JOB NUMBER 1414-001-860	PROJECT Douglas Harbor PROJECT MANAGER Brian Hester	SPECIES mytilus sp.	NEWFIELDS LABORATORY Port Gamble Incubator	PROTOCOL USEPA/USACE 1998
DILUTION WATER BATCH FSW122108.02		TEST START DATE 21Dec08	TEST END DATE 23Dec08	TIME
TEMP Recorder (HOBO)# na		TEMP		

WATER QUALITY DATA

CLIENT/NEWFIELDS ID	CONCENTRATION		TEMPERATURE (°C)	SALINITY (ppt)		pH (units)		AMMONIA		Sulfides	
	value	units		meter	meter	meter	unit	Techn.	mg/L	Techn.	mg/L
Area 4B /	0		3	3	30	3	8.2				BT 0.017
	1		3	3	31	3	8.2				
	2	100 %	3	3	31	3	8.3	CP	5.14		
	3										
	4										
Lower Comp /	0		3	3	31	3	8.1				
	1		3	3	31	3	8.1				
	2	1 %	3	3	31	3	8.1				
	3										
	4										
Lower Comp /	0		3	3	31	3	8.0				
	1		3	3	31	3	8.1				
	2	10 %	3	3	31	3	8.1				
	3										
	4										

① Temp out of range lowered temp in Incubator 12/22/08 ↓
② 12/22/08 ↓



LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE PHASE TEST WQ DATA SHEET

CLIENT PND	PROJECT Douglas Harbor	SPECIES mytilus sp.	NEWFIELDS LABORATORY Port Gamble Incubator	PROTOCOL USEPA/USACE 1998
NEWFIELDS JOB NUMBER 1414-001-860	PROJECT MANAGER Brian Hester	TEST START DATE 21Dec08	TEST END DATE 23Dec08	TIME
DILUTION WATER BATCH FSW122108.02		TEMP Recorder (HOBO)# na		

WATER QUALITY DATA

Test conditions		DO (mg/L)		TEMPERATURE (°C)		SALINITY (ppt)		pH (units)		Ammonia		Sulfides					
		meter	mg/L	meter	°C	meter	ppt	meter	unit	Techn.	mg/L	Techn.	mg/L				
CLIENT/NEWFIELDS ID	CONCENTRATION value	DAY	≥ 4.0		20 ± 1		32 ± 2		8.0 ± 1		AMMONIA		Sulfides				
			meter	mg/L	meter	°C	meter	ppt	meter	unit	Techn.	mg/L	Techn.	mg/L			
Lower Comp / .	50 %	0	3	7.9	3	15.1	3	31	3	8.0					12/21	BH	
		1	3	7.3	3	18.4	3	31	3	8.6					12/22	J	
		2	3	7.0	3	17.8	3	31	3	8.0					12-23	DP	
		3															
		4															
Lower Comp / .	100 %	0	3	7.7	3	15.7	3	30	3	8.0			BH 0.021		12/21	BH	
		1	3	7.0	3	19.4	3	31	3	8.1					12/22	J	
		2	3	6.8	3	18.5	3	31	3	8.1	UR <0.5				12/23	DP	
		3															
		4															

Temp out of range lowered temp in Incubator 12/22/08 ↓



Ammonia Analysis Total Ammonia (mg/L)

Client/Project: PND/Juneau Douglas Harbor	Organism: SPP Mytilus (larval)	NewFields Test ID:	Test Duration (days):
--	--	---------------------------	------------------------------

PRETEST / INITIAL / FINAL / OTHER (circle one) DAY of TEST: 8
 OVERLYING (OV) / POREWATER (PW) (circle one)

Calibration Standards Temperature		Sample temperature should be within $\pm 1^{\circ}\text{C}$ of standards temperature at time and date of analysis.
Date:	Temperature:	
22 Dec. '08	19.0	

Sample ID or Description	Conc. or Rep	Date of Sampling and Initials	Ammonia Value (mg/L)	Temp °C	Date of Reading and Initials	Sample Preserved (Y/N)	pH	Sal (ppt)	Sulf. mg/L
<u>8</u>	SWR.	12/21/08 BH	2.03	18.0	12/22/08 MMB	Y			
Site Water			<0.5						
BC			5.63						
Area 1 1/.			<0.5						
10/.			10.8						
50/.			15.5						
100/.			21.6						
Area 2 1/.			1.84						
10/.			4.40						
50/.			12.3						
100/.			18.5						
Area 4A 1/.			1.41						
10/.			3.90						
50/.			12.1						
100/.			15.7						
Area 4B 1/.	↓	↓	1.25	↓	↓	↓			



Ammonia Analysis Total Ammonia (mg/L)

Client/Project: PND/ Juneau Douglas Harbor	Organism: SPP Mytilus (larval)	NewFields Test ID:	Test Duration (days):
---	--	---------------------------	------------------------------

PRETEST (INITIAL) / FINAL / OTHER (circle one) DAY of TEST: 8
OVERLYING (OV) / POREWATER (PW) (circle one)

Calibration Standards Temperature		Sample temperature should be within $\pm 1^{\circ}\text{C}$ of standards temperature at time and date of analysis.
Date:	Temperature:	
22 Dec. '08	19.0	

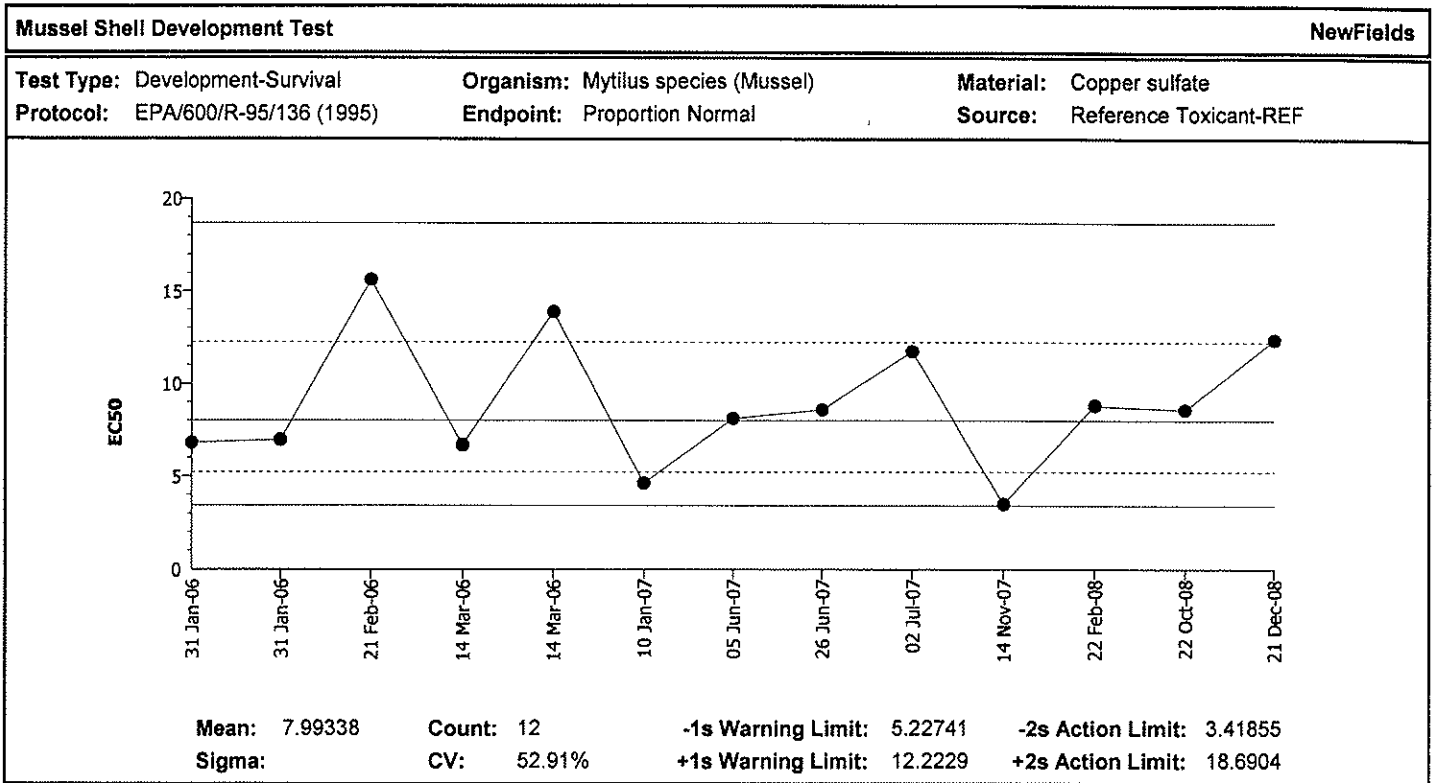
Sample ID or Description	Conc. or Rep	Date of Sampling and Initials	Ammonia Value (mg/L)	Temp $^{\circ}\text{C}$	Date of Reading and Initials	Sample Preserved (Y/N)	pH	Sal (ppt)	Sulf. mg/L
Area 4B 10%	Swm.	12/21/08 B#	5.82	18.0	12/22/08 MMB	Y	X		
50%	↓	↓	17.1	↓	↓	↓			
100%	↓	↓	26.2	↓	↓	↓			
LC 1%	↓	↓	0.794	↓	↓	↓			
10%	↓	↓	1.06	↓	↓	↓			
50%	↓	↓	3.66	↓	↓	↓			
100%	↓	↓	5.47	↓	↓	↓			



ORGANISM RECEIPT LOG

Date: 12/19/08		Time: 1715		NewFields Batch No. CA 5622	
Organism: Mytilus			Source: Carlsbad Aquafarms		
Address: On File				Invoice Attached Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Phone: On File			Contact: On File		
No. Ordered: 1 batch		No. Received: 1 batch		Source Batch: Field	
Condition of Organisms: Good			Approximate Size or Age: Adult		
Shipper: FedEx			B of L (Tracking No.): 7961 9740 5622		
Condition of Container: Good			Received By: BH		
Confirmation of ID of Organism: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				Technician (Initials):	
Notes:					
pH (Units)	Temp. (°C)	D.O. (mg/L)	Conductivity or Salinity (Include Units)	Technician (Initials)	
*			0	BH	
Notes: * shipped dry					

CETIS QC Chart



Quality Control Data										
Point	Year	Month	Day	Data	Delta	Sigma	Warning	Action	Test Link	Analysis
1	2006	Jan	31	6.78635	-1.20703	-0.38545			13-7720-1086	09-2249-8461
2			31	6.95016	-1.04322	-0.32929			07-7532-7374	01-6476-6154
3		Feb	21	15.63050	7.63712	1.57902	(+)		13-4991-4803	11-1130-3991
4		Mar	14	6.66272	-1.33066	-0.42874			06-2606-4386	10-2179-5612
5			14	13.87779	5.88441	1.29898	(+)		04-5028-3346	13-6407-7819
6	2007	Jan	10	4.61926	-3.37413	-1.29122	(-)		14-3905-0090	10-4591-2581
7		Jun	5	8.10135	0.10797	0.03159			13-7829-5492	06-3241-4206
8			26	8.58591	0.59252	0.16837			01-3435-1614	05-9641-3061
9		Jul	2	11.74293	3.74955	0.90567			05-4911-0140	17-0573-9257
10		Nov	14	3.49998	-4.49340	-1.94457	(-)		15-3555-7493	11-5553-6060
11	2008	Feb	22	8.81298	0.81960	0.22984			06-6162-8975	04-7060-4398
12		Oct	22	8.57651	0.58313	0.16579			13-5164-0440	04-9649-9989
13		Dec	21	12.36391	4.37053	1.02700	(+)		08-5734-3610	11-5187-3508

CETIS Analysis Detail

Mussel Shell Development Test NewFields

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
Proportion Normal	Comparison	08-5734-3610	08-5734-3610	21 Jan-09 8:45 AM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Dunnett's Multiple Comparison	C > T	Angular (Corrected)		5	10	20	7.07107	1.53%

Control	vs	Conc-µg/L	Statistic	Critical	P-Value	MSD	Decision(0.05)
Dilution Water		2.5	-0.0648	2.41651	0.7722	0.0483	Non-Significant Effect
		5	0.18283	2.41651	0.6812	0.0483	Non-Significant Effect
		10	16.8654	2.41651	0.0000	0.0483	Significant Effect

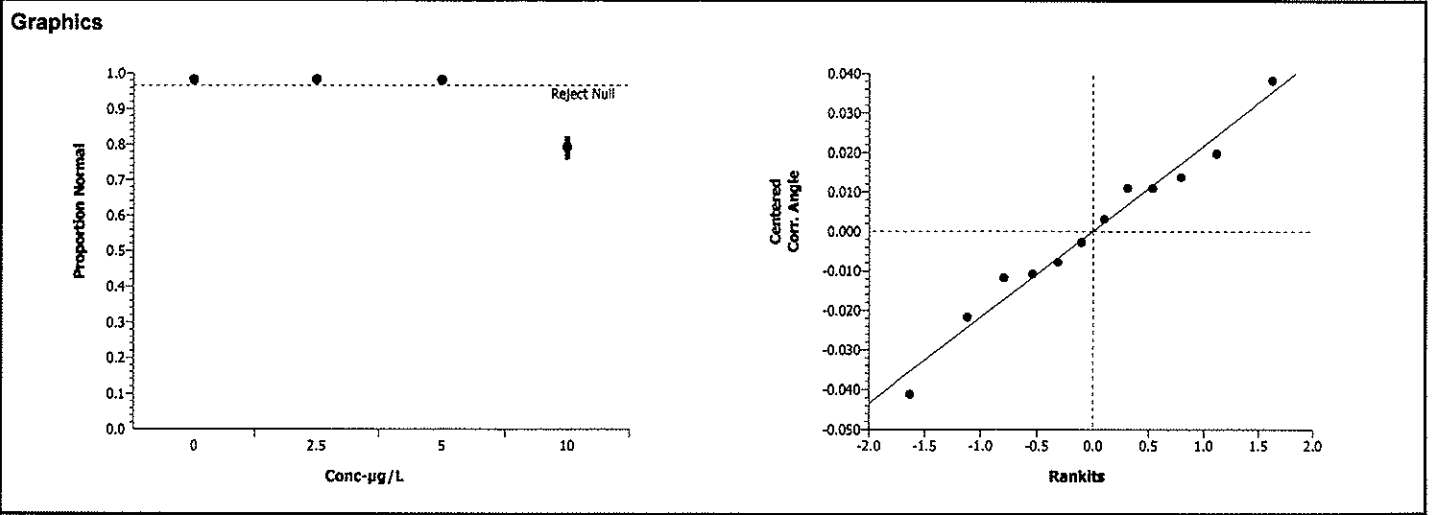
Attribute	Statistic	TAC Range	Overlap	Decision
Control Response	0.98133	0.9 - NL	Yes	Passes acceptability criteria

Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)
Between	0.2545096	0.0848365	3	141.58	0.00000	Significant Effect
Error	0.0047937	0.0005992	8			
Total	0.25930326	0.0854357	11			

Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)
Variances	Bartlett	2.62846	11.34487	0.45252	Equal Variances
Distribution	Shapiro-Wilk W	0.98472		0.99610	Normal Distribution

Conc-µg/L	Control Type	Count	Original Data				Transformed Data			
			Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Water	3	0.98133	0.97523	0.98438	0.00528	1.43457	1.41276	1.44547	0.01888
2.5		3	0.98180	0.97889	0.98538	0.00330	1.43586	1.42499	1.44959	0.01254
5		3	0.98037	0.97716	0.98563	0.00459	1.43091	1.41908	1.45064	0.01720
10		3	0.79159	0.75776	0.82235	0.03240	1.09748	1.05621	1.13571	0.03984

Conc-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	0.97523	0.98438	0.98438							
2.5		0.98113	0.97889	0.98538							
5		0.97716	0.97832	0.98563							
10		0.75776	0.79467	0.82235							



CETIS Analysis Detail

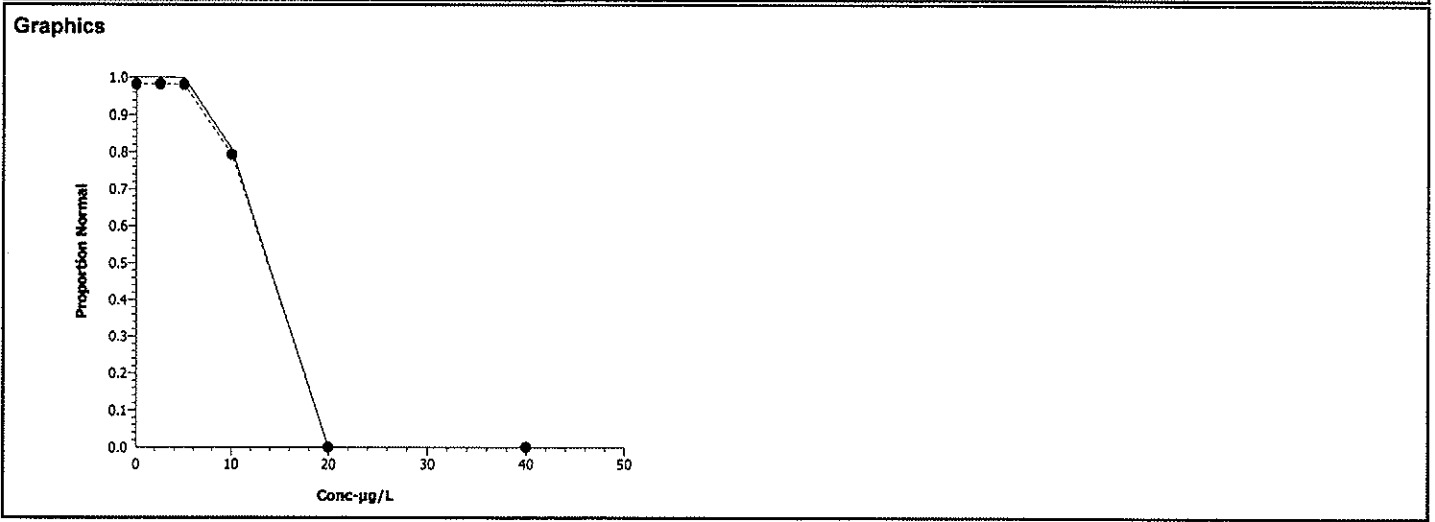
Mussel Shell Development Test **NewFields**

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
Proportion Normal	Trimmed Spearman-Karber	08-5734-3610	08-5734-3610	21 Jan-09 8:46 AM	CETISv1.1.2

Spearman-Karber Options					Point Estimates		
Threshold Option	Lower Threshold	Trim	Mu	Sigma	EC50/LC50	95% LCL	95% UCL
Control Threshold	0.01869159	0.00%	1.092156	0.003684713	12.36391	12.15588	12.57550

Test Acceptability				
Attribute	Statistic	TAC Range	Overlap	Decision
Control Response	0.98133	0.9 - NL	Yes	Passes acceptability criteria

Data Summary		Calculated Variate(A/B)							
Conc-µg/L	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B
0	Dilution Water	3	0.98133	0.97523	0.98438	0.00108	0.00528	945	963
2.5		3	0.98180	0.97889	0.98538	0.00067	0.00330	1020	1039
5		3	0.98037	0.97716	0.98563	0.00094	0.00459	1089	1111
10		3	0.79159	0.75776	0.82235	0.00661	0.03240	829	1046
20		3	0.00000	0.00000	0.00000	0.00000	0.00000	0	1004
40		3	0.00000	0.00000	0.00000	0.00000	0.00000	0	170





LARVAL DEVELOPMENT TEST
COPPER REF TOX WQ

CLIENT SAIC	PROJECT Duwamish	SPECIES <i>Mytilus edulis (mussel)</i>	NEWFIELDS LAB / LOCATION Port Gamble.	PROTOCOL PSEP (1995)
JOB NUMBER 0	PROJECT MANAGER T. Schuh	QUANTITY OF TOXICANT: 0.039 mL 0.039	QUANTITY OF DILUENT: 500mL 500.0	INIT BH
TEST ID P070930.94	LOT #: 1704237	TEST START DATE: 21Dec08	TIME 2355	TEST END DATE 12/24/08
				TIME 0145

WATER QUALITY DATA

DILTN.WAT.BATCH			TEMP REC#		REFERENCE TOX. MATERIAL				REFERENCE TOXICANT						
FSW122108.01					Copper Sulfate				Copper						
CLIENT/ NEWFIELDS ID			CONCENTRATION		DO (mg/L)		TEMP(C)		SAL (ppt)		pH		TECH.	DATE	
			value	units	>4.8		16.8 ± 1		30.2 ± 1		7.8 ± 0.5				
			DAY	REP	D.O.		TEMP.		SALINITY		pH				
					meter	mg/L	meter	°C	meter	ppt	meter	unit			
Ref.Tox.-Copper	0	µg/L	0	Stock	3	7.9	3	15.4	3	31	3	7.5	BH	12/21	
			1	Stock	3	7.3	3	17.7 ^{out}	3	31	3	8.0	J	12/22	
			2	Stock	3	7.4	3	16.8	3	31	3	7.8	BH	12/23	
			3	Stock											
			4	Stock											
Ref.Tox.-Copper	2.5	µg/L	0	Stock	3	7.8	3	15.2	3	30	3	7.5	BH	12/21	
			1	Stock	3	7.5	3	17.9 ^{out}	3	31	3	8.0	J	12/22	
			2	Stock	3	7.5	3	16.8	3	31	3	7.8	BH	12/23	
			3	Stock											
			4	Stock											
Ref.Tox.-Copper	5	µg/L	0	Stock	3	7.8	3	15.0	3	30	3	7.6	BH	12/21	
			1	Stock	3	7.4	3	17.7 ^{out}	3	31	3	8.0	J	12/22	
			2	Stock	3	7.5	3	16.7	3	31	3	7.8	BH	12/23	
			3	Stock											
			4	Stock											
Ref.Tox.-Copper	10	µg/L	0	Stock	3	7.8	3	15.1	3	31	3	7.6	BH	12/21	
			1	Stock	3	7.5	3	17.7 ^{out}	3	31	3	8.0	J	12/22	
			2	Stock	3	7.7	3	16.7	3	31	3	7.8	BH	12/23	
			3	Stock											
			4	Stock											
Ref.Tox.-Copper	20	µg/L	0	Stock	3	7.8	3	15.1	3	31	3	7.6	BH	12/21	
			1	Stock	3	7.6	3	17.7 ^{out}	3	31	3	8.0	J	12/22	
			2	Stock	3	7.4	3	16.7	3	31	3	7.8	BH	12/23	
			3	Stock											
			4	Stock											
Ref.Tox.-Copper	40	µg/L	0	Stock	3	7.8	3	15.8	3	31	3	7.7	BH	12/21	
			1	Stock	3	7.6	3	17.5 ^{out}	3	31	3	8.0	J	12/22	
			2	Stock	3	7.5	3	16.5	3	21	3	7.9	BH	12/23	
			3	Stock											
			4	Stock											

Temp out of range lowered temp in incubator 12/22/08 J

ECHINODERM LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE

PHASE TEST

NEWFIELDS

TOXICANT ENDPOINT DATA SHEET

SPECIES
mytilus sp.

CLIENT PND	PROJECT Douglas Harbor	NEWFIELDS JOB NUMBER 1414-001-860	PROJECT MANAGER Brian Hester	NEWFIELDS LABORATORY Port Gamble Incubator	PROTOCOL USEPA/USACE 1998
---------------	---------------------------	--------------------------------------	---------------------------------	---	---------------------------------

LARVAL OBSERVATION DATA

CLIENT/ MEC ID	CONCENTRATION		VIAL NUMBER	REP	NUMBER NORMAL	NUMBER ABNORMAL	DATE	TECHNICIAN	COMMENTS
	value	units							
Ref. Tox. -Copper	0 µg/L			1	315	8	1/2/09	J	
				2	315	5			
				3	315	5			
Ref. Tox. -Copper	2.5 µg/L			1	312	6			
				2	371	8			
				3	337	5			
Ref. Tox. -Copper	5 µg/L			1	385	9			
				2	361	8			
				3	343	5			
Ref. Tox. -Copper	10 µg/L			1	244	78			
				2	298	77			
				3	287	62			
Ref. Tox. -Copper	20 µg/L			1	∅	338			
				2	∅	315			
				3	∅	351			
Ref. Tox. -Copper	40 µg/L			1	∅	62			
				2	∅	47			
				3	∅	61			

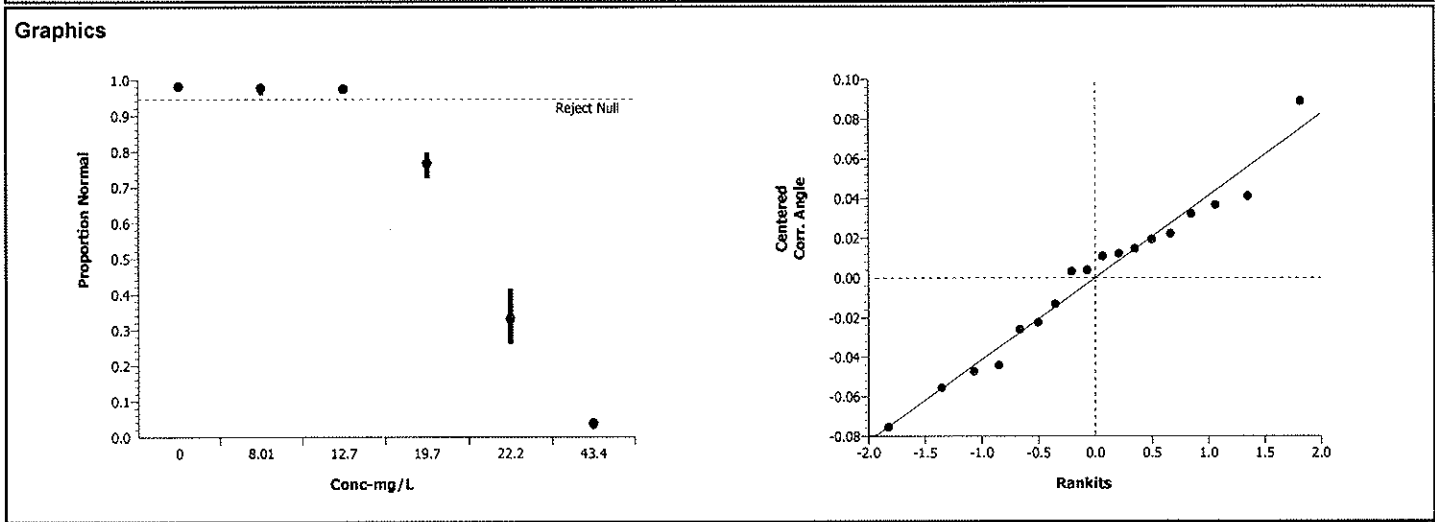
CETIS Analysis Detail

Comparisons: Page 1 of 2
 Report Date: 26 Jan-09 4:56 PM
 Analysis: 07-6746-0027

Mussel Shell Development Test							NewFields			
Endpoint	Analysis Type		Sample Link	Control Link	Date Analyzed	Version				
Proportion Normal	Comparison		12-6474-4613	12-6474-4613	26 Jan-09 4:56 PM	CETISv1.1.2				
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD		
Dunnett's Multiple Comparison	C > T	Angular (Corrected)		12.7	19.7	7.87402	15.8174	3.60%		
Group Comparisons										
Control	vs	Conc-mg/L	Statistic	Critical	P-Value	MSD	Decision(0.05)			
Dilution Water		8.01	0.31287	2.5023	0.7259	0.09817	Non-Significant Effect			
		12.7	0.63548	2.5023	0.5890	0.09817	Non-Significant Effect			
		19.7	9.36106	2.5023	0.0000	0.09817	Significant Effect			
		22.2	20.9262	2.5023	0.0000	0.09817	Significant Effect			
		43.4	31.6457	2.5023	0.0000	0.09817	Significant Effect			
Test Acceptability										
Attribute	Statistic		TAC Range	Overlap	Decision					
Control Response	0.98107		0.9 - NL	Yes	Passes acceptability criteria					
ANOVA Table										
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)				
Between	4.010513	0.8021026	5	347.39	0.00000	Significant Effect				
Error	0.0277072	0.0023089	12							
Total	4.03822005	0.8044115	17							
ANOVA Assumptions										
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)					
Variances	Bartlett	4.08445	15.08627	0.53732	Equal Variances					
Distribution	Shapiro-Wilk W	0.97441		0.87520	Normal Distribution					
Data Summary										
			Original Data				Transformed Data			
Conc-mg/L	Control Type	Count	Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Water	3	0.98107	0.97479	0.98623	0.00580	1.43382	1.41134	1.45316	0.02109
8.01		3	0.97631	0.95860	0.98834	0.01566	1.42155	1.36589	1.46260	0.04998
12.7		3	0.97364	0.96508	0.98061	0.00789	1.40889	1.38282	1.43109	0.02437
19.7		3	0.76593	0.72537	0.79683	0.03669	1.06655	1.01920	1.10320	0.04301
22.2		3	0.33232	0.26185	0.41667	0.07834	0.61281	0.53717	0.70167	0.08304
43.4		3	0.03748	0.02174	0.04954	0.01426	0.19224	0.14798	0.22445	0.03963

CETIS Analysis Detail

Data Detail											
Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	0.97479	0.98220	0.98623							
8.01		0.98834	0.95860	0.98198							
12.7		0.98061	0.96508	0.97523							
19.7		0.72537	0.77557	0.79683							
22.2		0.26185	0.41667	0.31844							
43.4		0.04116	0.04954	0.02174							

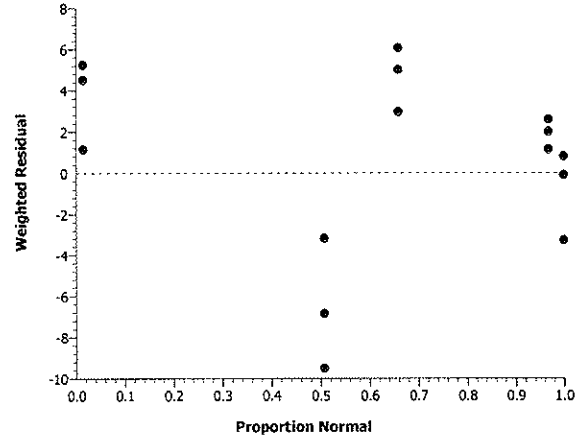
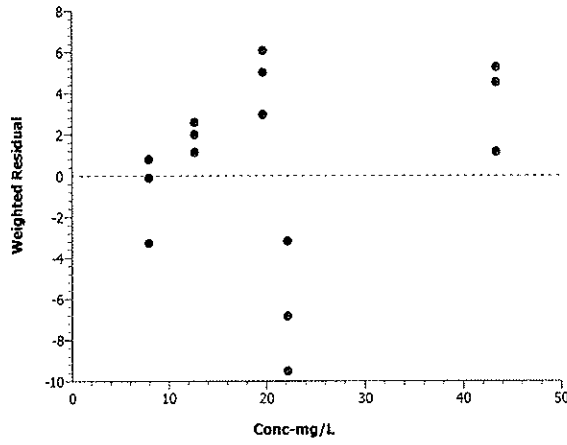
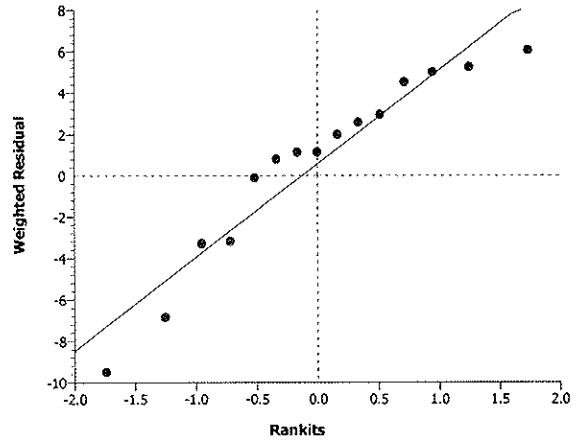
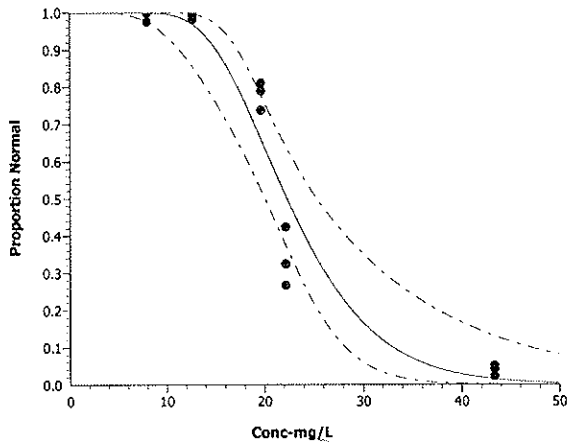


CETIS Analysis Detail

Mussel Shell Development Test										NewFields
Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version					
Proportion Normal	Linear Regression	12-6474-4613	12-6474-4613	26 Jan-09 4:56 PM	CETISv1.1.2					
Linear Regression Options										
Model Function	Threshold Option	Threshold	Threshold Opt	Reweighted	Pooled Groups	Het Corr				
Log-Normal [NED=A+B*log(X)]	Control Threshold	0.01892148	Yes	Yes	No	Yes				
Regression Summary										
Iters	Log Likelihood	Mu	Sigma	G	Chi-Sq	Critical	P-Value	Decision(0.05)		
15	-1709.10300	-0.68565	0.13266	0.11923	290.40420	22.36203	0.00000	Significant Heterogeneity		
Point Estimates										
% Effect	Conc-mg/L	95% LCL	95% UCL							
10	15.09854	12.18515	16.97767							
15	16.27241	13.58885	18.04528							
20	17.27012	14.7946	18.97259							
25	18.17468	15.88639	19.84037							
40	20.66973	18.78287	22.47369							
50	22.33281	20.52373	24.51861							
Test Acceptability										
Attribute	Statistic	TAC Range	Overlap	Decision						
Control Response	0.98107	0.9 - NL	Yes	Passes acceptability criteria						
Regression Parameters										
Parameter	Estimate	Std Error	95% LCL	95% UCL	t Statistic	P-Value	Decision(0.05)			
Threshold	0.01687767	0.01320119	-0.01164177	0.04539711	1.278	0.22343	Not Significant			
Slope	7.538162	1.204818	4.935311	10.14101	6.257	0.00003	Significant			
Intercept	-5.168553	1.554039	-8.525851	-1.811255	-3.326	0.00547	Significant			
Residual Analysis										
Attribute	Method	Statistic	Critical	P-Value	Decision(0.05)					
Variances	Bartlett	3.054051	9.48773	0.54882	Equal Variances					
Distribution	Shapiro-Wilk W	0.9117151		0.14386	Normal Distribution					
Data Summary										
		Calculated Variate(A/B)								
Conc-mg/	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B	
0	Dilution Water	3	0.98107	0.97479	0.98623	0.00118	0.00580	1037	1057	
8.01		3	0.97631	0.95860	0.98834	0.00320	0.01566	967	990	
12.7		3	0.97364	0.96508	0.98061	0.00161	0.00789	973	999	
19.7		3	0.76593	0.72537	0.79683	0.00749	0.03669	818	1066	
22.2		3	0.33232	0.26185	0.41667	0.01599	0.07834	374	1131	
43.4		3	0.03748	0.02174	0.04954	0.00291	0.01426	41	1104	

CETIS Analysis Detail

Graphics



CETIS Data Worksheet

Page 1 of 1
 Report Date: 26 Jan-09 4:56 PM
 Link: 12-6474-4613

Mussel Shell Development Test **NewFields**

Start Date: 21 Dec-08 11:55 PM **Species:** Mytilus species **Sample Code:** 155896778
Ending Date: 24 Dec-08 01:45 AM **Protocol:** EPA/600/R-95/136 (1995) **Sample Source:** Reference Toxicant
Sample Date: 21 Dec-08 11:55 PM **Material:** Total Ammonia **Sample Station:** P060224.49

Conc-mg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	D	1	17		357	357	348	
0	D	2	18		337	337	331	
0	D	3	11		363	363	358	
8.01		1	1		343	343	339	
8.01		2	12		314	314	301	
8.01		3	16		333	333	327	
12.7		1	7		361	361	354	
12.7		2	10		315	315	304	
12.7		3	13		323	323	315	
19.7		1	15		335	335	243	
19.7		2	4		352	352	273	
19.7		3	5		379	379	302	
22.2		1	8		401	401	105	
22.2		2	9		372	372	155	
22.2		3	6		358	358	114	
43.4		1	14		413	413	17	
43.4		2	3		323	323	16	
43.4		3	2		368	368	8	



BIVALVE LARVAL DEVELOPMENT COPPER REFERENCE TOXICANT ENDPOINT DATA SHEET

SPECIES
mytilus sp.

CLIENT PND	PROJECT Douglas Harbor	NEWFIELDS JOB # 1414-001-860	PROJECT MANAGER Brian Hester	NEWFIELDS LABORATORY Port Gamble Incubator	PROTOCOL USEPA/USACE 1998
---------------	---------------------------	---------------------------------	---------------------------------	---	---------------------------------

LARVAL OBSERVATION DATA

TREATMENT	CONCENTRATION		VIAL NUMBER	REP	NUMBER NORMAL	NUMBER ABNORMAL	DATE	TECH	COMMENTS
	value	units							
Ref.Tox. - Ammonia	0	µg/L		1	348	9	1/12/09	✓	
				2	331	6	↓	↓	
				3	358	5	↓	↓	
				4					
Ref.Tox. - Ammonia	1	µg/L		1	339	4	1/12/09	✓	
				2	301	13	↓	↓	
				3	327	6	↓	↓	
				4					
Ref.Tox. - Ammonia	3	µg/L		1	354	7	1/12/09	✓	
				2	304	11	↓	↓	
				3	315	8	↓	↓	
				4					
Ref.Tox. - Ammonia	5	µg/L		1	243	92	1/12/09	✓	
				2	273	79	↓	↓	
				3	302	77	↓	↓	
				4					
Ref.Tox. - Ammonia	7	µg/L		1	105	296	1/12/09	✓	
				2	155	317	↓	↓	
				3	114	244	↓	↓	
				4					
Ref.Tox. - Ammonia	11	µg/L		1	17	396	1/12/09	✓	
				2	16	307	↓	↓	
				3	8	360	↓	↓	
				4					



LARVAL DEVELOPMENT TEST AMMONIA REF TOX WQ

CLIENT PND BAIG	PROJECT Douglas Harbor	SPECIES <i>Mytilus edulis (mussel)</i>	NEWFIELDS LABORATORY Port Gamble.		PROTOCOL PSEP (1995)
NEWFIELDS JOB NUMBER 0	PROJECT MANAGER T. Schuh	QUANTITY OF STOCK TARGET: ACTUAL:	QUANTITY OF DILUENT: 1500mL ACTUAL:		INIT DATE PREP
Test ID P060224.49	LOT #: 06530KC	TEST START DATE: 21Dec08	TIME 2355	TEST END DATE 12/24/08	TIME 0145

WATER QUALITY DATA

DILUTIN.WAT.BATCH		TEMP REC#		REFERENCE TOX. MATERIAL						REFERENCE TOXICANT			
FSW122108.01				Ammonium chloride						Ammonia			
TEST CONDITIONS				DO (mg/L)		TEMP(C)		SAL (ppt)		pH		TECHNICIAN	
				> 4.8		15 ± 1		28 ± 1		8.00 ± 1			
CLIENT/ NEWFIELDS ID	CONCENTRATION		DAY	REP	D.O.		TEMP.		SALINITY		pH		WQ TECH
	value	units			meter	mg/L	meter	°C	meter	ppt	meter	unit	
Ref.Tox.-Ammonia	Target:		0	Stock	3	7.8	3	15.1	3	31	3	7.7	BH 12/21
	0 mg/L		1	Stock	3	7.4	3	17.4	3	31	3	8.0	J 12/22
			2	Stock	3	7.4	3	16.8	3	31	3	7.8	BH 12/23
		Actual:		3	Stock								
			4	Stock									
Ref.Tox.-Ammonia	Target:		0	Stock	3	7.8	3	15.9	3	31	3	7.7	BH 12/21
	1 mg/L		1	Stock	3	7.5	3	17.6 ^{OL}	3	31	3	8.0	J 12/22
			2	Stock	3	7.4	3	16.9	3	31	3	7.8	BH 12/23
		Actual:		3	Stock								
			4	Stock									
Ref.Tox.-Ammonia	Target:		0	Stock	3	7.8	3	15.3	3	30	3	7.7	BH 12/21
	3 mg/L		1	Stock	3	7.5	3	17.5 ^{OL}	3	31	3	8.0	J 12/22
			2	Stock	3	7.4	3	16.7	3	31	3	7.8	BH 12/23
		Actual:		3	Stock								
			4	Stock									
Ref.Tox.-Ammonia	Target:		0	Stock	3	7.9	3	15.0	3	31	3	7.7	BH 12/21
	5 mg/L		1	Stock	3	7.4	3	17.6 ^{OL}	3	31	3	8.0	J 12/22
			2	Stock	3	7.6	3	16.9	3	31	3	7.8	BH 12/23
		Actual:		3	Stock								
			4	Stock									
Ref.Tox.-Ammonia	Target:		0	Stock	3	7.8	3	15.3	3	31	3	7.7	BH 12/21
	7 mg/L		1	Stock	3	7.5	3	17.7 ^{OL}	3	31	3	8.0	J 12/22
			2	Stock	3	7.6	3	16.5	3	31	3	7.8	BH 12/23
		Actual:		3	Stock								
			4	Stock									
Ref.Tox.-Ammonia	Target:		0	Stock	3	7.9	3	15.4	3	30	3	7.7	BH 12/21
	11 mg/L		1	Stock	3	7.5	3	17.6 ^{OL}	3	31	3	8.0	J 12/22
			2	Stock	3	7.7	3	16.7	3	31	3	7.8	BH 12/23
		Actual:		3	Stock								
			4	Stock									

① Temp out of range lowered temp in incubator 12/22/08



Ammonia Analysis Total Ammonia (mg/L)

Client/Project: PND / Juneau Douglas Harbor	Organism: SPP Mytilus (larval)	NewFields Test ID:	Test Duration (days):
--	--	---------------------------	------------------------------

PRETEST / INITIAL / FINAL / OTHER (circle one) DAY of TEST: 8
 OVERLYING (OV) / POREWATER (PW) (circle one)

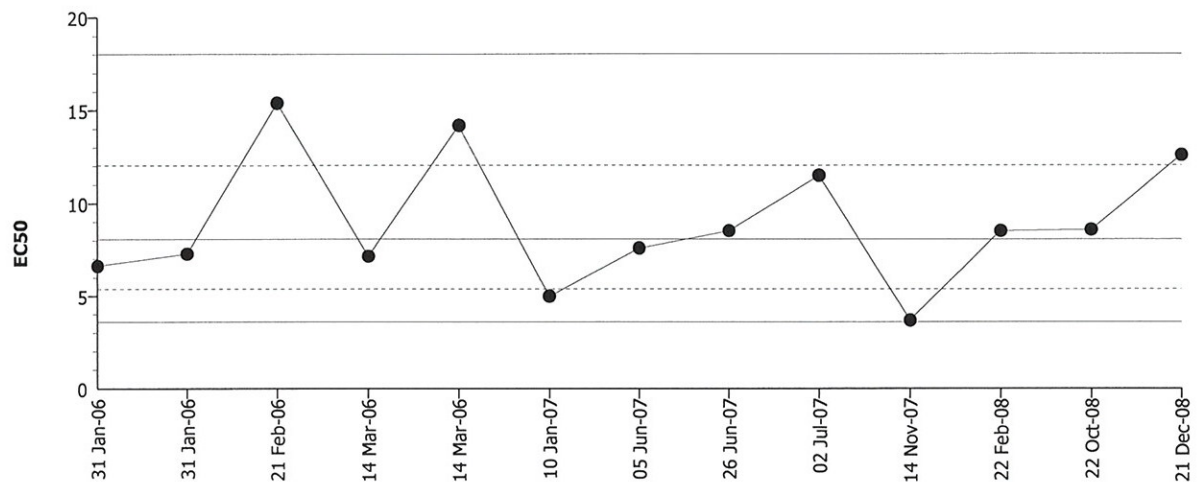
Calibration Standards Temperature		Sample temperature should be within $\pm 1^{\circ}\text{C}$ of standards temperature at time and date of analysis.
Date:	Temperature:	
22 Dec. '08	19.0	

Sample ID or Description	Conc. or Rep	Date of Sampling and Initials	Ammonia Value (mg/L)	Temp $^{\circ}\text{C}$	Date of Reading and Initials	Sample Preserved (Y/N)	pH	Sal (ppt)	Sulf (mg/L)
NH ₃ RT <input checked="" type="checkbox"/>	SUSD.	12/21/08 MMB	0.560	18.0	12/22/08 MMB	Y			
1	↓	↓	8.01	↓	↓	↓			
3	↓	↓	12.7	↓	↓	↓			
5	↓	↓	19.7	↓	↓	↓			
7	↓	↓	22.2	↓	↓	↓			
11	↓	↓	43.4	↓	↓	↓			

CETIS QC Chart

Mussel Shell Development Test **NewFields**

Test Type: Development-Survival Organism: Mytilus species (Mussel) Material: Copper sulfate
 Protocol: EPA/600/R-95/136 (1995) Endpoint: Combined Proportion Normal Source: Reference Toxicant-REF



Mean: 8.05554 Count: 12 -1s Warning Limit: 5.38297 -2s Action Limit: 3.59707
 Sigma: CV: 49.65% +1s Warning Limit: 12.0550 +2s Action Limit: 18.0402

Quality Control Data										
Point	Year	Month	Day	Data	Delta	Sigma	Warning	Action	Test Link	Analysis
1	2006	Jan	31	6.61806	-1.43748	-0.48759			13-7720-1086	09-0953-9971
2			31	7.27814	-0.77740	-0.25175			07-7532-7374	03-9619-0590
3		Feb	21	15.39971	7.34417	1.60743	(+)		13-4991-4803	05-4083-6897
4		Mar	14	7.14387	-0.91168	-0.29794			06-2606-4386	01-1874-9985
5			14	14.18912	6.13358	1.40433	(+)		04-5028-3346	02-3972-6078
6	2007	Jan	10	4.98039	-3.07516	-1.19283	(-)		14-3905-0090	14-8759-6838
7		Jun	5	7.58039	-0.47515	-0.15081			13-7829-5492	02-0555-4940
8			26	8.51244	0.45690	0.13685			01-3435-1614	10-7297-9254
9		Jul	2	11.50108	3.44554	0.88331			05-4911-0140	15-1586-2946
10		Nov	14	3.68371	-4.37184	-1.94096	(-)		15-3555-7493	15-2027-0867
11	2008	Feb	22	8.50255	0.44700	0.13397			06-6162-8975	04-4740-6893
12		Oct	22	8.57836	0.52281	0.15599			13-5164-0440	13-1167-6043
13		Dec	21	12.58855	4.53301	1.10743	(+)		08-5734-3610	04-9535-1989

CETIS Test Summary

Report Date:

17 Mar-09 3:47 PM

Test Link:

08-5734-3610

Mussel Shell Development Test							NewFields	
Test No:	09-0098-7048	Test Type:	Development-Survival	Duration:	50h			
Start Date:	21 Dec-08 11:55 PM	Protocol:	EPA/600/R-95/136 (1995)	Species:	Mytilus species			
Ending Date:	24 Dec-08 01:45 AM	Dil Water:	Laboratory Seawater	Source:	Carlsbad Aquafarms			
Setup Date:	21 Dec-08 11:55 PM	Brine:	Not Applicable					
Comments:	P070930.94							
Sample No:	15-8274-4335	Code:	1582744335	Client:	Internal Lab			
Sample Date:	21 Dec-08 11:55 PM	Material:	Copper sulfate	Project:	Reference Toxicant			
Receive Date:		Source:	Reference Toxicant					
Sample Age:	N/A	Station:	P070930.94					
Comparison Summary								
Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method		
14-6825-9651	Combined Proportion Norma	5	10	7.07107	N/A	Fisher Exact		
Point Estimate Summary								
Analysis	Endpoint	% Effect	Conc-µg/L	95% LCL	95% UCL	Method		
04-9535-1989	Combined Proportion Normal	50	12.58855	12.39108	12.78917	Trimmed Spearman-Kärber		
Combined Proportion Normal Summary								
Conc-µg/L	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Water	3	0.87989	0.87989	0.87989	0.00000	0.00000	0.00%
2.5		3	0.93058	0.87151	0.97889	0.03146	0.05449	5.86%
5		3	0.97119	0.95810	0.97832	0.00655	0.01135	1.17%
10		3	0.77188	0.68156	0.83240	0.04602	0.07971	10.33%
20		3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00%
40		3	0.00000	0.00000	0.00000	0.00000	0.00000	0.00%
Combined Proportion Normal Detail								
Conc-µg/L	Control Type	Rep 1	Rep 2	Rep 3				
0	Dilution Water	0.87989	0.87989	0.87989				
2.5		0.87151	0.97889	0.94134				
5		0.97716	0.97832	0.95810				
10		0.68156	0.83240	0.80168				
20		0.00000	0.00000	0.00000				
40		0.00000	0.00000	0.00000				

CETIS Analysis Detail

Mussel Shell Development Test NewFields

Test No: 09-0098-7048	Test Type: Development-Survival	Duration: 50h
Start Date: 21 Dec-08 11:55 PM	Protocol: EPA/600/R-95/136 (1995)	Species: Mytilus species
Ending Date: 24 Dec-08 01:45 AM	Dil Water: Laboratory Seawater	Source: Carlsbad Aquafarms
Setup Date: 21 Dec-08 11:55 PM	Brine: Not Applicable	

Comments: P070930.94

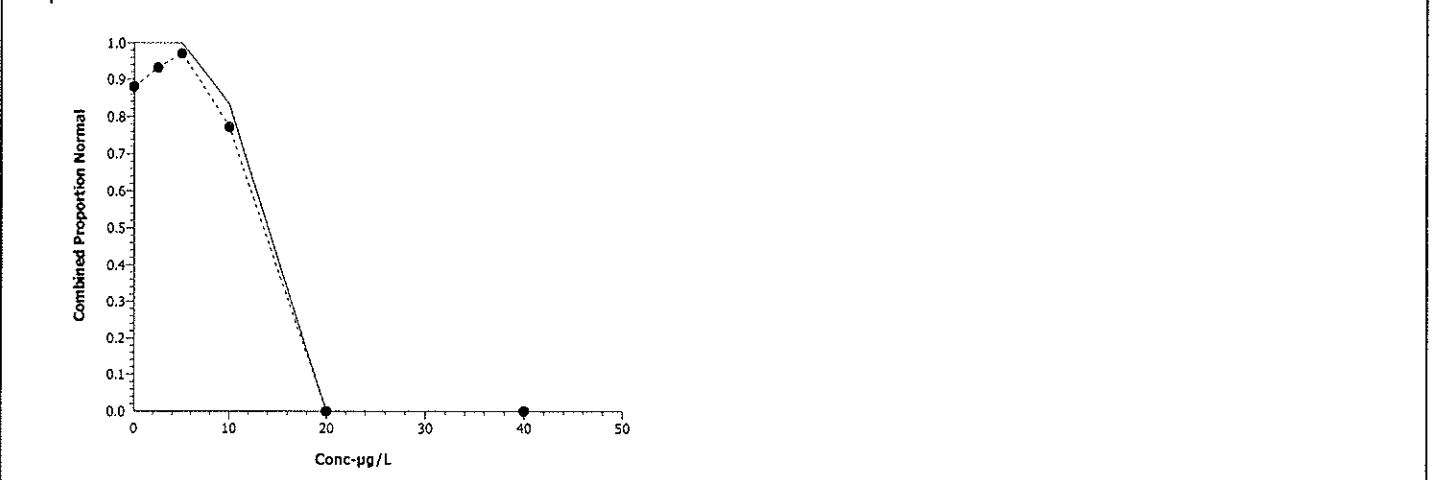
Sample No: 15-8274-4335	Code: 1582744335	Client: Internal Lab
Sample Date: 21 Dec-08 11:55 PM	Material: Copper sulfate	Project: Reference Toxicant
Receive Date:	Source: Reference Toxicant	
Sample Age: N/A	Station: P070930.94	

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
Combined Proportion Normal	Trimmed Spearman-Karber	08-5734-3610	08-5734-3610	17 Mar-09 3:47 PM	CETISv1.1.2

Spearman-Karber Options					Point Estimates		
Threshold Option	Lower Threshold	Trim	Mu	Sigma	EC50/LC50	95% LCL	95% UCL
Control Threshold	0.1201117	0.00%	1.099976	0.003433272	12.58855	12.39108	12.78917

Data Summary			Calculated Variate(A/B)						
Conc-µg/L	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B
0	Dilution Water	3	0.87989	0.87989	0.87989	0.00002	0.00010	945	1074
2.5		3	0.93058	0.87151	0.97889	0.01112	0.05449	1020	1095
5		3	0.97119	0.95810	0.97832	0.00232	0.01135	1089	1121
10		3	0.77188	0.68156	0.83240	0.01627	0.07971	829	1074
20		3	0.00000	0.00000	0.00000	0.00000	0.00000	0	1074
40		3	0.00000	0.00000	0.00000	0.00000	0.00000	0	1074

Graphics



CETIS Analysis Detail

Mussel Shell Development Test NewFields

Test No: 09-0098-7048	Test Type: Development-Survival	Duration: 50h
Start Date: 21 Dec-08 11:55 PM	Protocol: EPA/600/R-95/136 (1995)	Species: Mytilus species
Ending Date: 24 Dec-08 01:45 AM	Dil Water: Laboratory Seawater	Source: Carisbad Aquafarms
Setup Date: 21 Dec-08 11:55 PM	Brine: Not Applicable	

Comments: P070930.94

Sample No: 15-8274-4335	Code: 1582744335	Client: Internal Lab
Sample Date: 21 Dec-08 11:55 PM	Material: Copper sulfate	Project: Reference Toxicant
Receive Date:	Source: Reference Toxicant	
Sample Age: N/A	Station: P070930.94	

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
Combined Proportion Normal	Comparison	08-5734-3610	08-5734-3610	17 Mar-09 3:47 PM	CETISv1.1.2

Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD
Fisher Exact	C > T	Untransformed		5	10	20	7.07107	

Group Comparisons

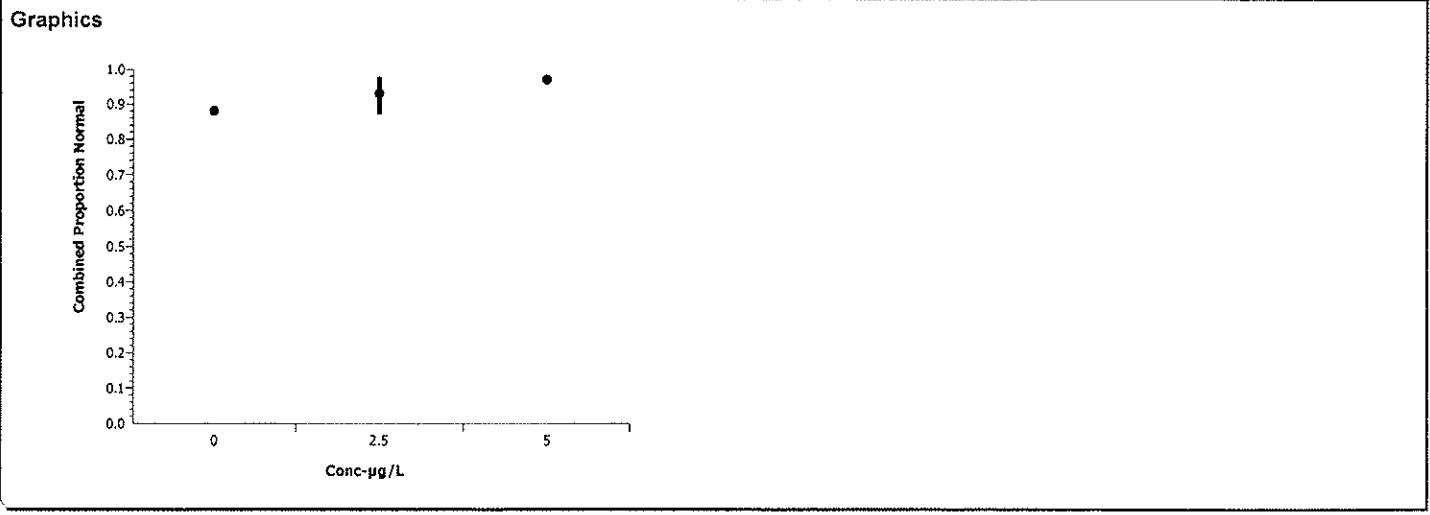
Control	vs	Conc-µg/L	Statistic	P-Value	Decision(0.05)
Dilution Water		2.5	1.00000	1.00000	Non-Significant Effect
Dilution Water		5	1.00000	1.00000	Non-Significant Effect
Dilution Water		10	0.00000	0.00000	Significant Effect

Data Summary

Conc-µg/L	Control Type	Non-Responders	Responders	Total Observed
0	Dilution Water	945	129	1074
2.5		1020	75	1095
5		1089	32	1121
10		829	245	1074

Data Detail

Conc-µg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	0.87989	0.87989	0.87989							
2.5		0.87151	0.97889	0.94134							
5		0.97716	0.97832	0.95810							
10		0.68156	0.83240	0.80168							



CETIS Data Worksheet

Report Date: 17 Mar-09 3:47 PM

Link: 08-5734-3610

Mussel Shell Development Test

NewFields

Start Date: 21 Dec-08 11:55 PM Species: Mytilus species

Sample Code: 1582744335

Ending Date: 24 Dec-08 01:45 AM Protocol: EPA/600/R-95/136 (1995)

Sample Source: Reference Toxicant

Sample Date: 21 Dec-08 11:55 PM Material: Copper sulfate

Sample Station: P070930.94

Conc-µg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	D	1	14	358	323	323	315	
0	D	2	3	358	320	320	315	
0	D	3	16	358	320	320	315	
2.5		1	6	358	318	318	312	
2.5		2	9	358	379	379	371	
2.5		3	18	358	342	342	337	
5		1	4	358	394	394	385	
5		2	13	358	369	369	361	
5		3	1	358	348	348	343	
10		1	8	358	322	322	244	
10		2	17	358	375	375	298	
10		3	11	358	349	349	287	
20		1	15	358	338	338	0	
20		2	7	358	315	315	0	
20		3	2	358	351	351	0	
40		1	5	358	62	62	0	
40		2	10	358	47	47	0	
40		3	12	358	61	61	0	

**ECHINODERM LARVAL DEVELOPMENTAL SUSPENDED PARTICULATE
PHASE TEST**



TOXICANT ENDPOINT DATA SHEET

SPECIES
mytilus sp.

CLIENT PND	PROJECT Douglas Harbor	NEWFIELDS JOB NUMBER 1414-001-860	PROJECT MANAGER Brian Hester	NEWFIELDS LABORATORY Port Gamble Incubator	PROTOCOL USEPA/USACE 1998
---------------	---------------------------	--------------------------------------	---------------------------------	---	---------------------------------

LARVAL OBSERVATION DATA

CLIENT/ MEC ID	CONCENTRATION		VIAL NUMBER	REP	NUMBER NORMAL	NUMBER ABNORMAL	DATE	TECHNICIAN	COMMENTS
	value	units							
Ref. Tox. -Copper	0	µg/L		1	315	8	1/12/09	J	
				2	315	5			
				3	315	5			
Ref. Tox. -Copper	2.5	µg/L		1	312	6	↓	↓	
				2	371	8			
				3	337	5			
Ref. Tox. -Copper	5	µg/L		1	385	9	↓	↓	
				2	361	8			
				3	343	5			
Ref. Tox. -Copper	10	µg/L		1	244	78	↓	↓	
				2	298	77			
				3	287	62			
Ref. Tox. -Copper	20	µg/L		1	Ø	338	↓	↓	
				2	Ø	315			
				3	Ø	351			
Ref. Tox. -Copper	40	µg/L		1	Ø	62	↓	↓	
				2	Ø	47			
				3	Ø	61			

stacking density

- 1) 296
- 2) 338.
- 3) 439

$\bar{x} = 357.7$



LARVAL DEVELOPMENT TEST
COPPER REF TOX WQ

CLIENT SAIC	PROJECT Duwamish	SPECIES <i>Mytilus edulis (mussel)</i>	NEWFIELDS LAB / LOCATION Port Gamble	PROTOCOL PSEP (1995)
JOB NUMBER 0	PROJECT MANAGER T. Schuh	QUANTITY OF TOXICANT: 0.039 mL 0.039	QUANTITY OF DILUENT: 500mL 500.0	INIT BH
TEST ID P070930.94	LOT #: 1704237	TEST START DATE: 21Dec08	TIME 2355	TEST END DATE 12/24/08
				TIME 0145

WATER QUALITY DATA

DILTIN.WAT.BATCH		TEMP REC#		REFERENCE TOX. MATERIAL				REFERENCE TOXICANT				TECH.	DATE		
FSW122108.01				Copper Sulfate				Copper							
				DO (mg/L)		TEMP(C)		SAL (ppt)		pH					
				>4.8		16.8 ± 1		30.2 ± 1		7.8 ± 0.5					
CLIENT/ NEWFIELDS ID	CONCENTRATION		DAY	REP	D.O.		TEMP.		SALINITY		pH				
	value	units			meter	mg/L	meter	°C	meter	ppt	meter	unit			
Ref.Tox.-Copper	0	µg/L	0	Stock	3	7.9	3	15.4	3	31	3	7.5	BH	12/21	
			1	Stock	3	7.3	3	17.2 ^{OK}	3	31	3	8.0	J	12/22	
			2	Stock	3	7.4	3	16.8	3	31	3	7.8	BH	12/23	
			3	Stock											
			4	Stock											
Ref.Tox.-Copper	2.5	µg/L	0	Stock	3	7.8	3	15.2	3	30	3	7.5	BH	12/21	
			1	Stock	3	7.5	3	17.9 ^{OK}	3	31	3	8.0	J	12/22	
			2	Stock	3	7.5	3	16.8	3	31	3	7.8	BH	12/23	
			3	Stock											
			4	Stock											
Ref.Tox.-Copper	5	µg/L	0	Stock	3	7.8	3	15.0	3	30	3	7.6	BH	12/21	
			1	Stock	3	7.4	3	17.7 ^{OK}	3	31	3	8.0	J	12/22	
			2	Stock	3	7.5	3	16.7	3	31	3	7.8	BH	12/23	
			3	Stock											
			4	Stock											
Ref.Tox.-Copper	10	µg/L	0	Stock	3	7.8	3	15.1	3	31	3	7.6	BH	12/21	
			1	Stock	3	7.5	3	17.7 ^{OK}	3	31	3	8.0	J	12/22	
			2	Stock	3	7.7	3	16.7	3	31	3	7.8	BH	12/23	
			3	Stock											
			4	Stock											
Ref.Tox.-Copper	20	µg/L	0	Stock	3	7.8	3	15.1	3	31	3	7.6	BH	12/21	
			1	Stock	3	7.6	3	17.7 ^{OK}	3	31	3	8.0	J	12/22	
			2	Stock	3	7.4	3	16.7	3	31	3	7.8	BH	12/23	
			3	Stock											
			4	Stock											
Ref.Tox.-Copper	40	µg/L	0	Stock	3	7.8	3	15.8	3	31	3	7.7	BH	12/21	
			1	Stock	3	7.6	3	17.5 ^{OK}	3	31	3	8.0	J	12/22	
			2	Stock	3	7.5	3	16.5	3	31	3	7.9	BH	12/23	
			3	Stock											
			4	Stock											

Temp out of range lower ed temp in incubator 12/22/08 J

CETIS Test Summary

Report Date:

17 Mar-09 3:53 PM

Test Link:

12-6474-4613

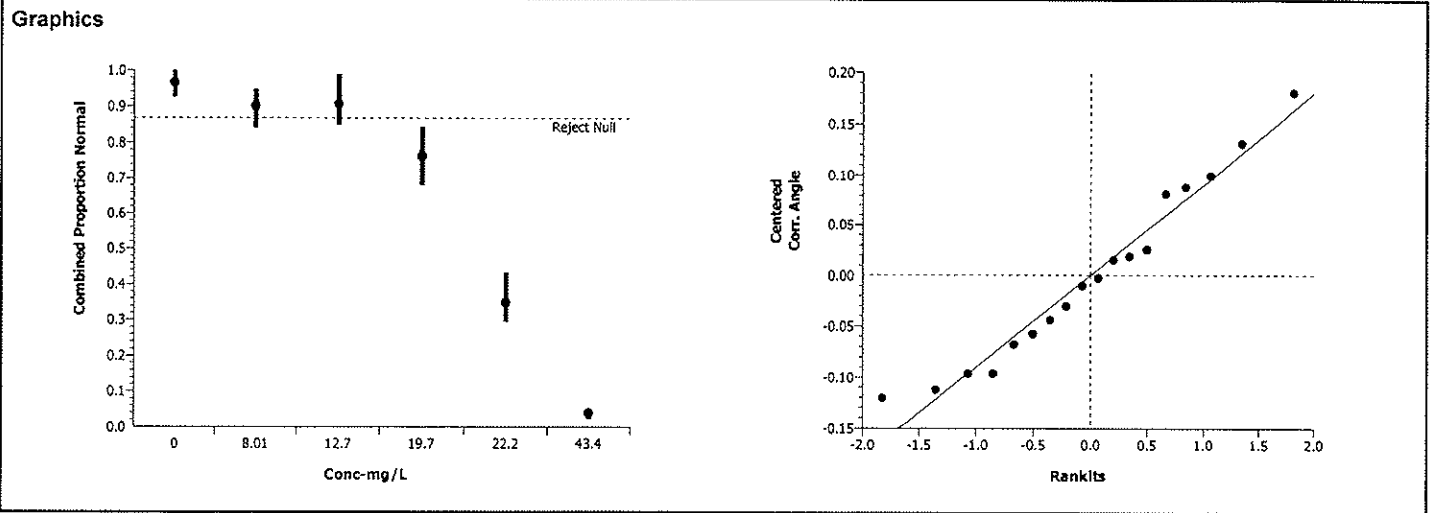
Mussel Shell Development Test							NewFields	
Test No:	20-2283-3732	Test Type:	Development-Survival	Duration:	50h			
Start Date:	21 Dec-08 11:55 PM	Protocol:	EPA/600/R-95/136 (1995)	Species:	Mytilus species			
Ending Date:	24 Dec-08 01:45 AM	Dil Water:	Laboratory Seawater	Source:	Carlsbad Aquafarms			
Setup Date:	21 Dec-08 11:55 PM	Brine:	Not Applicable					
Comments:	P060224.49							
Sample No:	01-5589-6778	Code:	155896778	Client:	Internal Lab			
Sample Date:	21 Dec-08 11:55 PM	Material:	Total Ammonia	Project:	Reference Toxicant			
Receive Date:		Source:	Reference Toxicant					
Sample Age:	N/A	Station:	P060224.49					
Comparison Summary								
Analysis	Endpoint	NOEL	LOEL	ChV	PMSD	Method		
15-0418-5551	Combined Proportion Normal	12.7	19.7	15.8174	10.10%	Dunnett's Multiple Comparison		
Point Estimate Summary								
Analysis	Endpoint	% Effect	Conc-mg/L	95% LCL	95% UCL	Method		
04-0535-6581	Combined Proportion Normal	50	22.61736	22.25007	22.99071	Trimmed Spearman-Kärber		
Test Acceptability								
Analysis	Endpoint	Attribute	Statistic	TAC Range	Overlap	Decision		
15-0418-5551	Combined Proportion Normal	PMSD	0.10102	NL - 0.25	No	Passes acceptability criteria		
Combined Proportion Normal Summary								
Conc-mg/L	Control Type	Reps	Mean	Minimum	Maximum	SE	SD	CV
0	Dilution Water	3	0.96555	0.92458	1.00000	0.02201	0.03813	3.95%
8.01		3	0.90037	0.84078	0.94693	0.03133	0.05426	6.03%
12.7		3	0.90596	0.84916	0.98883	0.04237	0.07339	8.10%
19.7		3	0.76164	0.67877	0.84358	0.04758	0.08241	10.82%
22.2		3	0.34823	0.29330	0.43296	0.04298	0.07445	21.38%
43.4		3	0.03818	0.02235	0.04749	0.00796	0.01378	36.09%
Combined Proportion Normal Detail								
Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3				
0	Dilution Water	0.97207	0.92458	1.00000				
8.01		0.94693	0.84078	0.91341				
12.7		0.98883	0.84916	0.87989				
19.7		0.67877	0.76257	0.84358				
22.2		0.29330	0.43296	0.31844				
43.4		0.04749	0.04469	0.02235				

CETIS Analysis Detail

Mussel Shell Development Test										NewFields
Test No:	20-2283-3732		Test Type:	Development-Survival			Duration:	50h		
Start Date:	21 Dec-08 11:55 PM		Protocol:	EPA/600/R-95/136 (1995)			Species:	Mytilus species		
Ending Date:	24 Dec-08 01:45 AM		Dil Water:	Laboratory Seawater			Source:	Carlsbad Aquafarms		
Setup Date:	21 Dec-08 11:55 PM		Brine:	Not Applicable						
Comments:	P060224.49									
Sample No:	01-5589-6778		Code:	155896778			Client:	Internal Lab		
Sample Date:	21 Dec-08 11:55 PM		Material:	Total Ammonia			Project:	Reference Toxicant		
Receive Date:										
Sample Age:	N/A		Station:	P060224.49						
Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version					
Combined Proportion Normal	Comparison	12-6474-4613	12-6474-4613	17 Mar-09 3:53 PM	CETISv1.1.2					
Method	Alt H	Data Transform	Zeta	NOEL	LOEL	Toxic Units	ChV	PMSD		
Dunnett's Multiple Comparison	C > T	Angular (Corrected)		12.7	19.7	7.87402	15.8174	10.10%		
Group Comparisons										
Control	vs	Conc-mg/L	Statistic	Critical	P-Value	MSD	Decision(0.05)			
Dilution Water		8.01	1.82563	2.5023	0.1486	0.21430	Non-Significant Effect			
		12.7	1.50292	2.5023	0.2348	0.21430	Non-Significant Effect			
		19.7	4.06971	2.5023	0.0032	0.21430	Significant Effect			
		22.2	9.14585	2.5023	0.0000	0.21430	Significant Effect			
		43.4	14.2341	2.5023	0.0000	0.21430	Significant Effect			
Test Acceptability										
Attribute	Statistic	TAC Range	Overlap	Decision						
PMSD	0.10102	NL - 0.25	No	Passes acceptability criteria						
ANOVA Table										
Source	Sum of Squares	Mean Square	DF	F Statistic	P-Value	Decision(0.05)				
Between	3.312135	0.6624269	5	60.21	0.00000	Significant Effect				
Error	0.1320208	0.0110017	12							
Total	3.4441555	0.6734287	17							
ANOVA Assumptions										
Attribute	Test	Statistic	Critical	P-Value	Decision(0.01)					
Variances	Bartlett	3.12929	15.08627	0.68006	Equal Variances					
Distribution	Shapiro-Wilk W	0.95501		0.50896	Normal Distribution					
Data Summary										
Conc-mg/L	Control Type	Count	Original Data				Transformed Data			
			Mean	Minimum	Maximum	SD	Mean	Minimum	Maximum	SD
0	Dilution Water	3	0.96555	0.92458	1.00000	0.03813	1.41328	1.29260	1.54437	0.12621
8.01		3	0.90037	0.84078	0.94693	0.05426	1.25693	1.16035	1.33833	0.08996
12.7		3	0.90596	0.84916	0.98883	0.07339	1.28457	1.17192	1.46490	0.15778
19.7		3	0.76164	0.67877	0.84358	0.08241	1.06474	0.96822	1.16418	0.09801
22.2		3	0.34823	0.29330	0.43296	0.07445	0.63001	0.57230	0.71816	0.07754
43.4		3	0.03818	0.02235	0.04749	0.01378	0.19425	0.15005	0.21968	0.03842

CETIS Analysis Detail

Data Detail											
Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Dilution Water	0.97207	0.92458	1.00000							
8.01		0.94693	0.84078	0.91341							
12.7		0.98883	0.84916	0.87989							
19.7		0.67877	0.76257	0.84358							
22.2		0.29330	0.43296	0.31844							
43.4		0.04749	0.04469	0.02235							



CETIS Analysis Detail

Mussel Shell Development Test **NewFields**

Test No: 20-2283-3732	Test Type: Development-Survival	Duration: 50h
Start Date: 21 Dec-08 11:55 PM	Protocol: EPA/600/R-95/136 (1995)	Species: Mytilus species
Ending Date: 24 Dec-08 01:45 AM	Dil Water: Laboratory Seawater	Source: Carlsbad Aquafarms
Setup Date: 21 Dec-08 11:55 PM	Brine: Not Applicable	

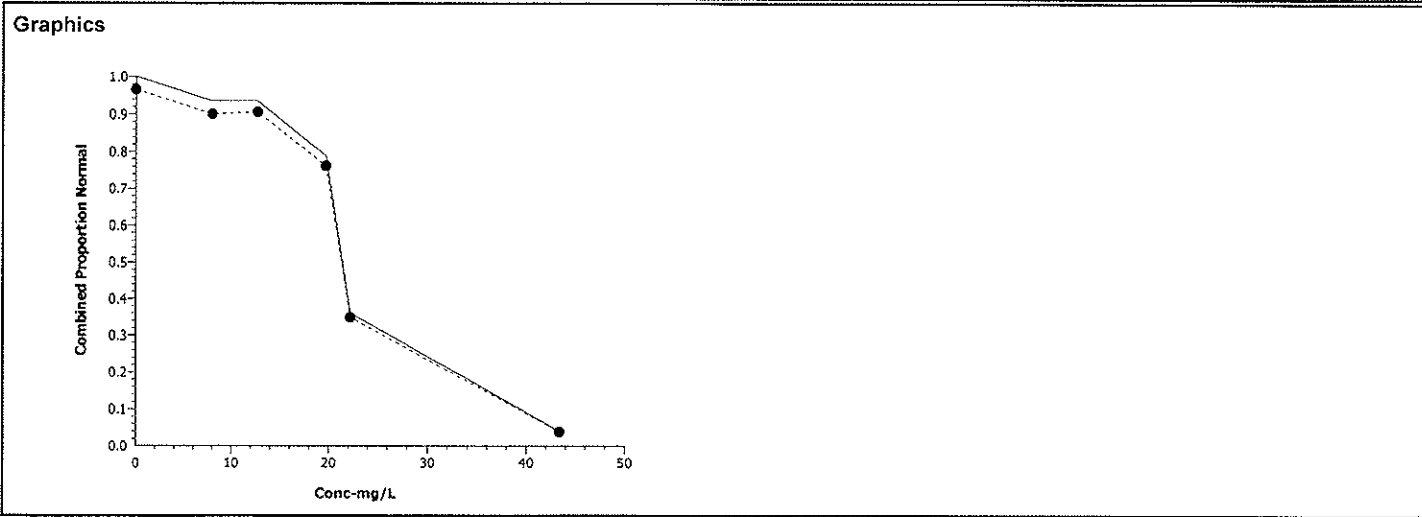
Comments: P060224.49

Sample No: 01-5589-6778	Code: 155896778	Client: Internal Lab
Sample Date: 21 Dec-08 11:55 PM	Material: Total Ammonia	Project: Reference Toxicant
Receive Date:	Source: Reference Toxicant	
Sample Age: N/A	Station: P060224.49	

Endpoint	Analysis Type	Sample Link	Control Link	Date Analyzed	Version
Combined Proportion Normal	Trimmed Spearman-Karber	12-6474-4613	12-6474-4613	17 Mar-09 3:53 PM	CETISv1.1.2

Spearman-Karber Options					Point Estimates		
Threshold Option	Lower Threshold	Trim	Mu	Sigma	EC50/LC50	95% LCL	95% UCL
Control Threshold	0.03445065	6.46%	1.354442	0.003555252	22.61736	22.25007	22.99071

Data Summary			Calculated Variate(A/B)						
Conc-mg/	Control Type	Count	Mean	Minimum	Maximum	SE	SD	A	B
0	Dilution Water	3	0.96555	0.92458	1.00000	0.00778	0.03813	1037	1074
8.01		3	0.90037	0.84078	0.94693	0.01108	0.05426	967	1074
12.7		3	0.90596	0.84916	0.98883	0.01498	0.07339	973	1074
19.7		3	0.76164	0.67877	0.84358	0.01682	0.08241	818	1074
22.2		3	0.34823	0.29330	0.43296	0.01520	0.07445	374	1074
43.4		3	0.03818	0.02235	0.04749	0.00281	0.01378	41	1074



CETIS Data Worksheet

Report Date: 17 Mar-09 3:53 PM

Link: 12-6474-4613

Mussel Shell Development Test								NewFields
Start Date:	21 Dec-08 11:55 PM	Species:	Mytilus species	Sample Code:	155896778			
Ending Date:	24 Dec-08 01:45 AM	Protocol:	EPA/600/R-95/136 (1995)	Sample Source:	Reference Toxicant			
Sample Date:	21 Dec-08 11:55 PM	Material:	Total Ammonia	Sample Station:	P060224.49			
Conc-mg/L	Code	Rep	Pos	Initial Density	Final Density	# Counted	# Normal	Notes
0	D	1	17	358	357	357	348	
0	D	2	18	358	337	337	331	
0	D	3	11	358	363	363	358	
8.01		1	1	358	343	343	339	
8.01		2	12	358	314	314	301	
8.01		3	16	358	333	333	327	
12.7		1	7	358	361	361	354	
12.7		2	10	358	315	315	304	
12.7		3	13	358	323	323	315	
19.7		1	15	358	335	335	243	
19.7		2	4	358	352	352	273	
19.7		3	5	358	379	379	302	
22.2		1	8	358	401	401	105	
22.2		2	9	358	372	372	155	
22.2		3	6	358	358	358	114	
43.4		1	14	358	413	413	17	
43.4		2	3	358	323	323	16	
43.4		3	2	358	368	368	8	



BIVALVE LARVAL DEVELOPMENT COPPER REFERENCE TOXICANT ENDPOINT DATA SHEET

SPECIES
mytilus sp.

CLIENT PND	PROJECT Douglas Harbor	NEWFIELDS JOB # 1414-001-860	PROJECT MANAGER Brian Hester	NEWFIELDS LABORATORY Port Gamble Incubator	PROTOCOL USEPA/USACE 1998
---------------	---------------------------	---------------------------------	---------------------------------	---	---------------------------------

LARVAL OBSERVATION DATA

TREATMENT	CONCENTRATION		VIAL NUMBER	REP	NUMBER NORMAL	NUMBER ABNORMAL	DATE	TECH	COMMENTS
	value	units							
Ref.Tox. - Ammonia	0 µg/L			1	348	9	1/12/09	✓	
				2	331	6	↓	↓	
				3	358	5	↓	↓	
				4					
Ref.Tox. - Ammonia	1 µg/L			1	339	4	1/12/09	✓	
				2	301	13	↓	↓	
				3	327	6	↓	↓	
				4					
Ref.Tox. - Ammonia	3 µg/L			1	354	7	1/12/09	✓	
				2	304	11	↓	↓	
				3	315	8	↓	↓	
				4					
Ref.Tox. - Ammonia	5 µg/L			1	243	92	1/12/09	✓	
				2	273	79	↓	↓	
				3	302	77	↓	↓	
				4					
Ref.Tox. - Ammonia	7 µg/L			1	105	296	1/12/09	✓	
				2	155	317	↓	↓	
				3	114	244	↓	↓	
				4					
Ref.Tox. - Ammonia	11 µg/L			1	17	396	1/12/09	✓	
				2	16	307	↓	↓	
				3	8	360	↓	↓	
				4					

stocking density

- 1) 296
- 2) 338
- 3) 439

$$\bar{x} = 357.7$$



LARVAL DEVELOPMENT TEST AMMONIA REF TOX WQ

CLIENT PND SAIG	PROJECT Douglas Harbor	SPECIES <i>Mytilus edulis (musse)</i>	NEWFIELDS LABORATORY Port Gamble .	PROTOCOL PSEP (1995)
NEWFIELDS JOB NUMBER 0	PROJECT MANAGER T. Schuh	QUANTITY OF STOCK TARGET: ACTUAL:	QUANTITY OF DILUENT: 1500mL ACTUAL:	INIT DATE PREP
Test ID P060224.49	LOT #: 06S30KC	TEST START DATE: 21Dec08	TIME 2355	TEST END DATE 12/29/08

WATER QUALITY DATA

DILTIN.WAT.BATCH		TEMP REC#		REFERENCE TOX. MATERIAL						REFERENCE TOXICANT			
FSW122108.01				Ammonium chloride						Ammonia			
TEST CONDITIONS				DO (mg/L)		TEMP(C)		SAL (ppt)		pH		TECHNICIAN	
				> 4.8		15 ± 1		28 ± 1		8.00 ± 1			
CLIENT/ NEWFIELDS ID	CONCENTRATION		DAY	REP	D.O.		TEMP.		SALINITY		pH		WQ TECH
	value	units			meter	mg/L	meter	°C	meter	ppt	meter	unit	
Ref.Tox.-Ammonia	Target:		0	Stock	3	7.8	3	15.1	3	31	3	7.7	BH 12/21
			1	Stock	3	7.4	3	17.4	3	31	3	8.0	J 12/22
	0 mg/L		2	Stock	3	7.4	3	16.8	3	31	3	7.8	BH 12/23
			3	Stock									
			4	Stock									
Ref.Tox.-Ammonia	Target:		0	Stock	3	7.8	3	15.9	3	31	3	7.7	BH 12/21
			1	Stock	3	7.5	3	17.6 OL	3	31	3	8.0	J 12/22
	1 mg/L		2	Stock	3	7.4	3	16.9	3	31	3	7.8	BH 12/23
			3	Stock									
			4	Stock									
Ref.Tox.-Ammonia	Target:		0	Stock	3	7.8	3	15.3	3	30	3	7.7	BH 12/21
			1	Stock	3	7.5	3	17.5 OL	3	31	3	8.0	J 12/22
	3 mg/L		2	Stock	3	7.4	3	16.7	3	31	3	7.8	BH 12/23
			3	Stock									
			4	Stock									
Ref.Tox.-Ammonia	Target:		0	Stock	3	7.9	3	15.0	3	31	3	7.7	BH 12/21
			1	Stock	3	7.4	3	17.6 OL	3	31	3	8.0	J 12/22
	5 mg/L		2	Stock	3	7.6	3	16.9	3	31	3	7.8	BH 12/23
			3	Stock									
			4	Stock									
Ref.Tox.-Ammonia	Target:		0	Stock	3	7.8	3	15.3	3	31	3	7.7	BH 12/21
			1	Stock	3	7.5	3	17.7 OL	3	31	3	8.0	J 12/22
	7 mg/L		2	Stock	3	7.6	3	16.5	3	31	3	7.8	BH 12/23
			3	Stock									
			4	Stock									
Ref.Tox.-Ammonia	Target:		0	Stock	3	7.9	3	15.4	3	30	3	7.7	BH 12/21
			1	Stock	3	7.5	3	17.6 OL	3	31	3	8.0	J 12/22
	11 mg/L		2	Stock	3	7.7	3	16.7	3	31	3	7.8	BH 12/23
			3	Stock									
			4	Stock									

(O) Temp out of range lowered temp in Incubator 12/22/08



Ammonia Analysis Total Ammonia (mg/L)

Client/Project: PNDI, Juneau Douglas Harbor	Organism: SPP Mytilus (larval)	NewFields Test ID:	Test Duration (days):
--	--	---------------------------	------------------------------

PRETEST / INITIAL / FINAL / OTHER (circle one) DAY of TEST: 8
 OVERLYING (OV) / POREWATER (PW) (circle one)

Calibration Standards Temperature		Sample temperature should be within $\pm 1^{\circ}\text{C}$ of standards temperature at time and date of analysis.
Date:	Temperature:	
22 Dec. '08	19.0	

Sample ID or Description	Conc. or Rep	Date of Sampling and Initials	Ammonia Value (mg/L)	Temp. $^{\circ}\text{C}$	Date of Reading and Initials	Sample Preserved (Y/N)	pH	Sal (ppt)	Sulf. mg/L
NH ₃ RT 8	SWD.	12/21/08 MMB	0.560	18.0	12/22/08 MMB	Y			
1	↓	↓	8.01	↓	↓	↓			
3	↓	↓	12.7	↓	↓	↓			
5	↓	↓	19.7	↓	↓	↓			
7	↓	↓	22.2	↓	↓	↓			
11	↓	↓	43.4	↓	↓	↓			