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APPENDIX E  Construction-Related Emissions Calculations and Fugitive Dust Control
Construction-Related Emissions Calculations and Fugitive Dust Control Requirements
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Short-Term Construction Emissions (Alternative 1 - Levee Str	Strengthening Alternative)	tive)					
				ROG	NOX	PM10	
Light Duty Trk (grams/mile)				0.24	0.44	0.04	
HH Trk Diesel (grams/mile)				0.65	7.23	0.24	
Assumptions: EMFAC2002 emission factors for 2007 conditions based on an average trip speed of 30 mph, 60%/40% cold/hot start.	start, and 75 degrees Fahrenheit.						
Mobile Source Emissions (Levee and Slurry Wall)							
	Number			ROG	Ň	PM10	
				29.44	103.52	5.44	
Other Construction	4.00			16.64	75.44	4.16	
Rubber Tired Dozer	00.9			43.56	258.60	13.44	
Cranes	1.00			2.88	12.32	0.68	
Grader	3.00			7.20	58.38	3.18	
Off-Highway Trucks	2.00			14.40	55.92	2.88	
Roller	3.00			3.54	26.82	1.44	
Scraper	6.00			43.68	191.52	10.20	
Loader	1.00			1.34	9.08	0.76	
Subtotal 192.68 791.6 Assumptions: Emission factors from the Road Construction Emissions Model, Version 5.1 (Sacramento Menopolitan Ar Quality Management Destrict 2004), which assumes equipment operates for 16 harday, and equipment sagar information from pretiminary design information.	y Management District 2004), which assumes e	quipment operates for 16 hrs	v'day, and equipment usage informa	162.68 ation from preliminary design	791.60 information.	<b>42.18</b> lbs/day	
On Employee Trins	Total Trips/Day	Miles/Trip	Total Miles/Day	1	194	017 he/day	
OCIT. Employee in page 11 pps  Apen marinner. Board on a mareigning of 400 amplauence (2 tring-leav/pmm-leaves) with an average trin leaveshorf 40.0 miles and EME/APS	200.002		20000000000000000000000000000000000000	don't accorded 25 how that		100/000	
Assembly to the control of the contr	181.80	2.00	363.60	0.52	5.80	0.19 lbs/day	
Haul Truck Trips Offsite (Aggregate base, Concrete, Drain Rock)	126.67	5.50	696.69	1.00	11.10	0.37 lbs/day	
Haul Truck Trips Offsite (Materials Delivery)	4.40	80.00	352.00	0.50	5.61	0.19 lbs/day	
Assumptions. Transportation of 1,600,000 yet of III 2 miles and 38,000 yet of aggregate base and other material 5.5 miles, 858 transfort of mile. material (ey bentonite, goobastie labe, conceive, demoifier debrie, etc.) (ron Maryanille, 440 (22 deprintent bit 20 months) work days from 2007.2008.	58 truck loads for transport of misc. material (d	y bentonite, geotextile fabric	concrete, demolition debris, etc.) f	rom Marysville, 440 (22 days	month for 20 month	s) work days from 2007-2008,	
truck capacity of 20 yd/3, and EMFAC2002 emission factors for 2007 conditions based on an average trip speed of 30 mph, 60%40% cold/hot start, and 75 degrees Fahrenheit	0%/40% cold/hot start, and 75 degrees Fahren	neit.					
Fligitive Diet Source Emissions							
	(acre)						
Disturbance Area	0.88					53.42 lbs/day	
Assumptions: SMAQMD emission factor of 60.71 fiss'acreiday (Sacramento Metropolitan Air Quality Management District 1994) for a total daily disturbance of 0.88 acres.	4) for a total daily disturbance of 0.88 acres.					,	
	Total Cubic Yards	Duration	Tons/Cubic Yards	Total Tons/Day			
Scraper (Loading)	1600000.00	440.00	1.25	4545.45		263.64 lbs/day	
	0000		7:	2.00		655,650	
Scraper (Travel Mode)  E/lbs/VMT⊑(62) (10)∿6 (siv.1.4 /W/v2.5 (0.60)							
Where:							
W=Weight of Scraper:	50	(tons)					
s=Silt Content of Material:	10	(percent)					
	1.65	lbs/vMT					
	Total Trips/Day	Miles/Trip	Total Miles/Day				
	121.21	0.75	90.91			150.16 lbs/day	
Assumptions: Transportation of 1,600,000 yd^3 of fill .75 mile orisite, 440 work days from 2007-08, load capacity of 30 yd^3, and AP.	nd AP-42 emission factors (U.S. Erwironmental Protection Agency 1995)	Protection Agency 1995).					
					:		
				ROG	XON	PM10	
Total Mobile Equipment				164.70	814.11	42.93	
Total Employee				1.06	1.94	0.17	
Total Fugitive Dust				OF 30 A	040 05	649.04	
Total (Total Construction North-unmitigated				165.76	816.05	692.14 lbs/day	
Total (Total Constituction North)-miligated				197.93	623.63	100.04 lDs/day	
				-		_	-

MODE Source Entisioned Californy Well and Levee)	MODING SQUETCE Emissions (Slutry Well and Levee)   1900	Short-Term Construction Emissions (Alternatives 2 &	3 - ASB and ISL	Alternatives)						
	The Control December   Control					ROG	NOx	PM10		
Fig. 0   Decision   Fig. 0   Part   Fig. 0	MODIO SOUTH CELEBRISON (SULTY Well and Level)   Moderation   Moderat	Light Duty Trk (grams/mile)				0.24	0.44	0.04		
Marches   Control Empires	Marchest Purchische Der Schaff Purch Marchest Afford Der Schaff Purch Marches Afford Der Schaff Purch Marchest Afford Der Schaff Purch Marches Afford Der Schaff Purch Marches Afford Der Schaff Purch Marches Afford Der Schaff Purch Der Sc	HH Trk Diesel (grams/mile)				0.65	7.23	0.24		
Page	Mobile Source Emissions (Slury Wall and Leves)   120	Assumptions: EMFAC2002 emission factors for 2007 conditions based on an average trip speed of 30 mph., 60%								
Control Cont	Control Cont	Mobile Source Emissions (Slurry Wall and Levee)								
Control State   Control Stat	Control Cont	Equipment	Number			ROG	XON	PM10		
Control Cont	Continue C	Excavator	6.00			22.08	77.64	4.08		
Control Cont	Control   Cont	Other Construction	3.00			12.48	56.58	3.12		
Control Cont	Comparison	Rubber Tired Dozer	00.9			43.56	258.60	13.44		
Control Cont	Control Cont	Cranes	1.00			2.88	12.32	0.68		
Content	Control Cont	Grader	4.00			09.6	77.84	4.24		
Section	Secretary   Control	Off-Highway Trucks	2.00			14.40	55.92	2.88		
Content   Cont	Comparison   Com	Roller	4.00			4.72	35.76	1.92		
Comparison   Com	Comparison   Com	Scraper	10.00			72.80	319.20	17.00		
Subtroom   Part   Par	1992   1992	Loader	1.00			1.34	9.08	92.0		
Total Triple   Total Triple   Total Triple   Total Miles   Total Miles	Court Employee Tips   Total Missing Court Employee Tips   Total	Subtotal				183.86	902.94			
Control Employee Tigot	Conception   Total Disposition   Total Dispo	Assumptions: Emission factors from the Road Construction Emissions Model, Version 5.1 (Sacramento Metropo	oolitan Air Quality Management District 2004), whic	h assumes equipment opera	tes for 16 hrs/day, and equipment us	sage information from prelin	ninary design inform	ation.		
Comparison   Com	Content   Cont		Total Trips/Day	Miles/Trip	Total Miles/Day					
Automatication   Parameter	Mail Truck Tips Colore ( Section 200 colore)   Mail Truck Tips Colore ( Mail Truck Tips Colore)   Mail Truck Tips Colore ( Mail Truck Tips Colore)   Mail Truck Tips Colore ( Mail Truck Tips Colore)   Mail Truck Tips Colore ( Mail Truck Tips Colore)   Mail Truck Tips Colore ( Mail Truck Tips Colore)   Mail Truck Tips Colore ( Mail Truck Tips Colore)   Mail Truck Tips Colore ( Mail Truck Tips Colore)   Ma	Con. Employee Trips	200.00	10.00	2000.00	1.06	1.94	0.17 lbs/da		
Half Truck Trips Order based Control and Order (Trips)   575.00   5.50.00   5.50.00   0.44   4.51   0.40   0.61	Half Treet Trips Crafte base, Concrete, Delib Rook)   375,00   5.50   702,00   1.45   1.15   6.46   6.45   9.4   1.15   6.46   9.4   9.5   9.5   9.4   9.5   9.4   9.5   9.5   9.4   9.5   9.5   9.4   9.5   9.5   9.4   9.5   9.5   9.5   9.4   9.5   9.5   9.4   9.5   9.5   9.4   9.5   9.5   9.4   9.5   9.5   9.4   9.5   9.5   9.4   9.5   9.5   9.4   9.5	Assumptions: Based on a maximum of 100 employees (2 trips/day/employee) with an average trip length of 10.0	.0 miles and EMFAC2002 emission factors for 200	7 conditions based on an ave	srage trip speed of 30 mph, 60%/40°		rees Fahrenheit			
Fig. 10   Fig.	Hard Truet Circle Office Off	Haul Truck Trips Onsite and Offsite (Transport of Fill)	375.00	2.00	750.00		11.95	0.40 lbs/da		
Fugitive Dust Source Emissions   1-400   1-60.00   1-6	Name   Part   Their Properties   Part   Th	Haul Truck Trips Offsite (Aggregate base, Concrete, Drain Rock)	26.00	5.50	308.00	0.44	4.91	0.16 lbs/da		
Accordance of 2000 o	Comparison of a 12 column	Haul Truck Trips Offsite (Materials Delivery)	13.00	80.00	1040.00	1.49	16.58	0.55 lbs/da		
Troe Emissions         (acre)         2.80         Adv. (bot)         Adv. (bot) <td>  Tree Emission laters for 2007 conditions based on an average file general 25 and 176 degrees Fahrenheit    </td> <td>Assumptions: Transportation of 3,300,000 ydv3 of fill 2 miles and 17,000 yv3 of aggregate base and other mater.</td> <td>erial 5.5 miles, 2,700 truck loads for transport of mi</td> <td>isc. material (dry bentonite, gr</td> <td>sotextile fabric, concrete, demolition</td> <td>debris, etc.) from Marysville</td> <td>s, 440 (22 days/mon</td> <td>th for 20 months) work</td> <td>ays from 2007-2008,</td> <td></td>	Tree Emission laters for 2007 conditions based on an average file general 25 and 176 degrees Fahrenheit	Assumptions: Transportation of 3,300,000 ydv3 of fill 2 miles and 17,000 yv3 of aggregate base and other mater.	erial 5.5 miles, 2,700 truck loads for transport of mi	isc. material (dry bentonite, gr	sotextile fabric, concrete, demolition	debris, etc.) from Marysville	s, 440 (22 days/mon	th for 20 months) work	ays from 2007-2008,	
Composition	Comparison   Com	truck capacity of 20 yd <sup>2</sup> 3, and EMFAC2002 emission factors for 2007 conditions based on an average trip spee	sed of 30 mph, 60%/40% cold/hot start, and 75 deg	grees Fahrenheit.						
Composition	Color   Colo									
Control   Cont	Focial Cubic Variable   Foci	Fugitive Dust Source Emissions								
Total Case   Continue   Continu	Total Cubic Varids   Total Total Total Cubic Varids   Total Cubic Varids   Total Total Varids   Total Total Varids   Tota							00 00		
Total Cubic Variation   Tota	Total Custo Value   Total Va	Disturbance Area	7.80					BD/SQI 66.601.		
Virginity   Virg	1.44 (W/V2.5 (0.60)   W=Weight of Scraper   Total Trips/Day   W=Weight of Scraper   Total Trips/Day   With tigated   W=Weight of Scraper   Total Trips/Day   W=Weight of Scraper   Total Trips/Day   With tigated   W=Weight of Scraper   Total Trips/Day   W=Weight of Scraper   Total Trips/Day   W=Weight of Scraper   Total Trips/Day   With tigated   W=Weight of Scraper   Total Trips/Day   W=Weight of Scraper   W=Weight of Scraper   Total Trips/Day   W=Weight of Scraper   W=Weight of Scraper   Total Trips/Day   W=Weight of Scraper   W=Weight of Scraper   W=Weight of Scraper   Total Trips/Day   W=Weight of Scraper	Assumptions: SMAQMD emission factor of 60.71 lbs/acre/day (Sacramento Metropolitan Air Quality Manageme	nent District 1994) for a total daily disturbance of 2.	8 acres.	Tonoffhip Varda	Total Tono/Day				
126   9375.00   125   9375.00	125 937500   125	Seranor (Loadine)	330000 3300000	Dalation		032500		5/3 75 lbc/do		
1,14 (W/v2.5 (0.60)   W=Weight of Scraper.   50 (tons)   tons   10 (percent)	1.1.4 (W/V2.5 (0.60)  W=Weight of Scraper.  S=Sit Confert of Naterial:  1.65  (tons)  (percent)  1.65  (box/MT  1.65  (box/MT  1.65  (box/MT  1.65  (box/MT  1.65  (box/MT  1.65  (box/MT  1.65  1.65  (box/MT  1.65  1.65  1.67  1.67  1.67  1.67  1.68  1.67  1	Scraper (Batch Unloading)	00 00000000		125	9375.00		375 00 lbs/da		
6 (s)P.1.4 (WI)P.2.5 (0.60)  W=Weight of Scraper  S=Sitt Content of Material:  1.65   IbsA/MIT  Total TripsDay   MilesTrip   Total MilesDay   MilesTrip   Total MilesDay   187.50    3.300.000 y/r3 of fil. 75 mile onsite, 40 work days from 2007-08, bad capacity of 30 y/r3, and AP-42 emission tactors (U.S. Environmental Protection Agency 1986).  1.06   Nox    1.07   Rock   190.00    1.08   1.94    1.09   1.94    1.00   North)-unitigated   178.58    1.10   1.94    1.10	6 (s)P.1.4 (W)-2.5 (0.60)  W=Weight of Scraper  S=-Sitt Content of Material:  1.65  Ibs/WT  1.67  Ibs/WT  1.67  Ibs/WT  1.68  Ibs/WT  1.68  Ibs/WT  1.67  Ibs/WT  1.68  Ibs/WT  1.68  Ibs/WT  1.68  Ibs/WT  1.69  Ibs/WT  1.69  Ibs/WT  1.60  Ibs/WT  Ib	(G								
Foreign   Walkeight of Scraper   50   (tons)   Walkeight of Scraper   50   (tons)   Walkeight of Scraper   10   (tons)   (tons)	Foreign   Walkeight of Scraper   50   (tons)     Walkeight of Scraper   1.65   (tons)     Walkeight of Materials   1.65   (tons)     Walkeight of Miles/Trip   Total Miles/Trip   Total Miles/Trip   Total Miles/Day   Wiles/Trip   Wiles/Tri	Scraper (Travel Mode)								
Second   WelVeight of Scraper   50 (tons)	Se-Sitt Content of Material: 10 (percent)   (percent	E(IDS/VNI)=(0.2) (10)~0 (5/~1.4 (W)~2.3 (0.00) Where								
Total TripsDay   Total TripsDay   Miles/Trip   Total Miles/Day	Content of Material: 1.65   Ibst/MT   Total Miles/Day   Ibst/MT   Total Miles/Day   Ibst/MT   Total Miles/Day   Ibst/MT   Ib			(tone)						
1.65   Ibs/VMT   Total Miles/Day   Imples/Day   Imples/	1.65 Ibs/VMT  Total Trips/Day Miles/Trip Total Miles/Day  Total Trips/Day Miles/Trip Total Miles/Day  187.50  250.00  0.75 187.50  ROG  NOX  Tent  Total Miles/Trip Total Miles/Day  187.50  187.50  NOX  ROG  NOX  Lotion North)-unmitigated  188.73  Lotion North)-unmitigated  188.73  Lotion North)-miligated  188.73  Lotion North)-miligated  188.73  Lotion North)-miligated	S=Slit Content of Material.		(percent)						
Total Trips/Day Miles/Trip Total Miles/Day Miles/Trip Total Miles/Day Not of fit 75 mile orasin 440 work days from 2007-08, bad capacity of 30 yd*3, and AP-42 erression factors (U.S. Environmental Protection Agency 1985)  Then the trips of fit 75 mile orasin 440 work days from 2007-08, bad capacity of 30 yd*3, and AP-42 erression factors (U.S. Environmental Protection Agency 1985)  Then the trips of fit 75 mile orasin 440 work days from 2007-08, bad capacity of 30 yd*3, and AP-42 erression factors (U.S. Environmental Protection Agency 1985)  Then the trips of fit 75 mile orasin 440 work days from 2007-08, bad capacity of 30 yd*3, and AP-42 erression factors (U.S. Environmental Protection Agency 1985)  Then the trips of fit 75 mile orasin 440 work days from 2007-08, bad capacity of 30 yd*3, and AP-42 erression factors (U.S. Environmental Protection Agency 1985)  The trips of fit 75 mile orasin 440 work days from 2007-08, and AP-42 erression factors (U.S. Environmental Protection Agency 1985)  The trips of fit 75 mile orasin 440 work days from 2007-08, and AP-42 erression factors (U.S. Environmental Protection Agency 1985)  The trips of fit 75 mile orasin 440 work days from	Total Trips/Day Miles/Trip Total Miles/Day Miles/Trip Total Miles/Day Not 3300.000 yg/3 of 18 75 mile onsite, 440 work days from 2007 48, bad capacity of 30 yg/5, and AP-42 emission factors (U.S. Environmental Protection Agency 1995).  **ROG*** NOX***  **ROG**** NOX***  **ROG****  **ROG****  **ROG****  **ROG***  **ROG**  **ROG*			lbs/VMT						
Total Trips/Day   Miles/Trip   Total Miles/Day   Total Miles/Day   Total Miles/Day   256.000   256.000   187.50   187.50   187.50   187.50   187.50   187.50   187.50   187.50   187.50   187.52   187.	Total Trips/Day   Miles/Trip   Total Miles/Day   Miles/Trip   Total Miles/Day   187.50									
Not 3,300,000 ypt 3 of 11 75 mile onelia, 440 work days from 2007-08, bad capachy of 30 ypt 3, and AP42 emission factors (U.S. Environmental Protection Agency 1995)   187,500   NOX	250,000 byt 3 of \$1.75 mile onsite, 440 work days from 2007 08, bad capacity of \$250,000 byt 3.300,000 yet 3 of \$1.75 mile onsite, 440 work days from 2007 08, bad capacity of \$250,000 byt 3.300,000 yet 3 of \$1.75 mile onsite, 440 work days from 2007 08, bad capacity of \$250,000 byt 3.300,000 yet 3 of \$1.75 mile onsite, 440 work days from 2007 08, bad capacity of \$1.05 mile onsite, 440 work days from 2007 08, bad capacity of \$1.05 mile onsite, 440 work days from 2007 08, bad capacity of \$1.05 mile onsite, 440 work days from 2007 08, bad capacity of \$1.05 mile onsite, 440 work days from 2007 08, bad capacity of \$1.05 mile onsite, 440 work days from 2007 08, bad capacity of \$1.05 mile onsite, 440 work days from 2007 08, bad capacity of \$1.05 mile onsite, 440 work days from 2007 08, bad capacity of \$1.05 mile onsite, 440 work days from 2007 08, bad capacity of \$1.05 mile onsite, 440 work days from 2007 08, bad capacity of \$1.05 mile onsite, 440 work days from 2007 08, bad capacity of \$1.05 mile onsite, 440 work days from 2007 08, bad capacity of \$1.05 mile onsite, 440 work days from 2007 08, bad capacity of \$1.05 mile onsite of		Total Trips/Day	Miles/Trip	Total Miles/Day					
In of 3,300,000 yg/93 of fil 75 mile cnisite, 440 work days from 2007-48, bad capacity of 30 yg/53, and AP-42 emission factors (U.S. Environmental Protection Agency 1995).         ROG         NOX           Thent         100 months, and AP-42 emission factors (U.S. Environmental Protection Agency 1995).         100 months         <	Then It is a not on North)-unmitigated         Residence of 18.75 mile crisite, 440 work days from 2007-48, baid capacity of 30 yd*3, and AP-42 emission factors (U.S. Environmental Protection Agency 1995).         ROG         NOX           Then It is a not on North)-unmitigated         1.94         1.94         1.94         1.94           Action North)-unitigated         1.87.58         751.04         175.04		250.00	0.75				309.72 lbs/da		
nent         ROG         NOX           nent         186.87         936.38           1.06         1.94           1.07         1.94           1.08         1.87.92           1.08         178.58           1.04         178.58           1.04         178.58	nent         ROG         NOX           166.87         936.38         1.94           1.06         1.94         1.94           1.07         1.94         1.94           1.08         1.87.92         938.32         1           1.18.58         751.04	Assumptions: Transportation of 3,300,000 yd/3 of fill .75 mile onsite, 440 work days from 2007-08, load capacity	ity of 30 yd^3, and AP-42 emission factors (U.S. Er	nvironmental Protection Agen	cy 1995).					
nent         NOA           Nob         108.83           1.06         1.94           1.07         1.94           1.08         1.94           1.09         1.94           1.00 <td>  Note</td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td>Č</td> <td>0</td> <td></td> <td></td>	Note					0	Č	0		
106   190.37   190.38   190.	196.27   196.36   194.36   194.36   194.36   194.36   194.36   194.36   194.36   194.36   194.36   194.36   194.36   194.36   194.36   194.36   194.36   199.36   1					POS S	XON SO	PIMIO		
134   155   154   157.02   134   157.02   134   157.02   134   147.02   134   147.02   134   147.02   134   147.02   134   147.02   134   147.02   134   147.02   134   147.02   134   147.02   134   147.02   134   147.02   134   147.02   134   1	Letion North)-unmitigated         134         1         2         1         1         1         2         1         1         1         2         1         1         2         1         1         2         1         2         1         2         1         2         1         2         2         1         2         2         1         2         2         2         2         2         2         2         2         2         2<	Total Mobile Equipment				186.87	936.38	49.23		
Letion North)-unmitigated         187.92         938.32         1           Letion North)-mitigated         178.58         751.04	Locition North)-unmitigated         187.92         938.32         1           Locition North)-mitigated         178.58         751.04	Total Employee				80:1	1.94	1200 46		
178.58 751.04	178.58 751.04	Total (Total Construction Mosth)mitimated				40702	0000	1447 96 Ibelia		
#D1101	11030 73114	Total (Total Construction North)-unmitigated				187.92	938.32	1447.86 IDS/ds		
		Total (Total Construction North)-mingated				17 0.30	101.04	370.00 105/05		

# FEATHER RIVER AIR QUALITY MANAGEMENT DISTRICT

Serving the Counties of Yuba and Sutter
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Steven A. Speckert Air Pollution Control Officer

# REQUIREMENTS FOR THE CONTROL OF FUGITIVE DUST EMISSIONS

## Introduction

The Feather River Air Quality Management District (FRAQMD) is designated nonattainment for the California PM10 health standard (particulate matter less than 10 microns in size; also referred to in this document as respirable particulate matter and fugitive dust). This means that Yuba and Sutter Counties violate the state PM10 air quality health standard. Construction activities, agricultural operations, unpaved roads, and windblown dust contribute heavily to these emissions. According to the U.S. EPA, exposure to high concentrations of particulate matter, including airborne dust, affects breathing, aggravates existing respiratory and cardiovascular disease, and alters the body's defenses against foreign materials, lung damage, skin cancer and premature death. Further studies have linked respirable particulate matter with health problems like asthma and chronic bronchitis.

This document serves to address the aforementioned health concerns by informing the public of applicable state laws and local rules and regulations governing fugitive dust emissions and the capacity for the air district to issue violations (refer to Attachment A). Also attached to this document are a list of approved mitigation measures (refer to Attachment B) and a fugitive dust control plan to be submitted by the project proponent for FRAQMD approval (refer to Attachment C).

## Discussion

Frequent nuisance complaints are received at the air district in regard to construction site fugitive dust emissions. Standard CEQA mitigation recommendations approved for the project are not always implemented by the project proponent. Appropriate emphasis on the need for fugitive dust controls and the potential impacts of air district enforcement actions need to be stressed.

In accordance with California Health and Safety Code (H&S) section 42400 et seq., the FRAQMD can assess civil and criminal penalties for violations of the FRAQMD Rules and Regulations and the H&S. Violations are misdemeanors and can carry potential penalties from \$1,000 to \$1,000,000 per day per violation and/or imprisonment in the county jail.

This document cites applicable air pollution regulations, defines performance criteria and acceptable control strategies to implement, and specifies emission levels and standards not to exceed in order to prevent a violation (refer to Attachment A). The project proponent should have a thorough understanding of these regulations. If additional information is required please contact the District at the location provided above.

## Prevention

Fugitive dust control strategies are composed of a balance of available dust mitigation techniques applied on an as needed basis by construction site supervision to

- prevent dust from exiting the property,
- prevent visible emissions from exceeding opacity regulations, and
- prevent public nuisance.

This implies the use of adequate measures during the appropriate evolution of each construction activity and may include wind breaks and barriers, frequent water applications, application of soil additives, control of vehicle access, vehicle speed restrictions, covering of piles, use of gravel at site exit points to remove caked on dirt from tires and tracks, washing of equipment at the end of each work day and prior to site removal, wet sweeping of public thoroughfares, and work stoppage (refer to Attachment B).

### Site-Specific Considerations

Time of year, length of project, and acres per day undergoing vegetative removal, excavation, backfilling, hauling and grading should be the primary focus for implementation of dust control measures. The plan must also consider dust emissions associated with construction activities after completion of grading activities including installation of infrastructure (including water, electric, roads, sidewalks, and sewer), digging of building foundations, site vehicle traffic, and landscaping activities.

Knowledge of soil types may be important to understand the free silt content and the ability to hold moisture. Some soils are hydrophobic – repel water - and may require the addition of surfactants during water applications to facilitate penetration and achieve appropriate moisture adsorption. Surfactants may also be used to reduce the amount of water needed.

Activities occurring near sensitive receptors should receive a higher level of preventative planning. Sensitive receptors include school-aged children (schools, daycare, playgrounds), the elderly (retirement community, nursing homes), the infirm (medical facilities/offices), and those who exercise outdoors regularly (public and private exercise facilities, parks).

## Other Regulatory Requirements

The project proponent should evaluate water quality, flora and fauna and other environmental impacts (e.g. wildlife, drinking water, stormwater runoff, and surface water impacts) prior to the use of water/soil additives including binders, tackifiers, surfactants, and other materials and methods. All additives at a minimum must meet Regional Water Quality Control Board (RWQCB) requirements and all applicable federal, state, and local environmental regulations regarding the use of the material.

## Fugitive Dust Control Plan Submittal

Complete and sign Attachment C, Fugitive Dust Control Plan, and submit to FRAQMD prior to start of work.

## **ORIGINAL SIGNED**

Larry D. Matlock Senior Air Quality Planner

Note: This document may be downloaded from our web site at http:// www.fraqmd.org/Downloads/FugitiveDustControlPlan.doc or http:// www.fraqmd.org/Downloads/FugitiveDustControlPlan.pdf

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	FRAQMD – Effective 09/09/03

# LOCAL AND STATE REGULATIONS APPLICABLE TO FUGITIVE DUST

## I. FRAQMD Rules and Regulations

Note: The following District Rules and Regulations are enforced for each project regardless of lead agency or Board approved project CEQA mitigation requirements.

## FRAQMD RULE 3.0 - VISIBLE EMISSIONS (Adopted 6/91)

As provided by Section 41701 of the California Health and Safety Code, a person shall not discharge into the atmosphere from any single source of emissions whatsoever, any air contaminants for a period or periods aggregating more than three minutes in any one hour which is:

- a. As dark or darker in shade as that designated as No. 2 on the Ringlemen Chart, as published by the United States Bureau of Mines; or
- b. Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Subsection 'a' above.

Enforcement: The District has trained staff capable of performing a Visible Emissions Evaluation (VEE). VEE courses are offered to regulators and the regulated community (for a fee) at regular intervals by staff of the California Air Resources Board.

## FRAQMD RULE 3.16 - FUGITIVE DUST EMISSIONS (Adopted 4/11/94)

#### A. PURPOSE

The purpose of this Rule is to reasonably regulate operations which periodically may cause fugitive dust emissions into the atmosphere.

#### **B. DEFINITION**

For the purpose of this Rule, the following definitions shall apply:

- B.1 Fugitive Dust: Solid airborne matter emitted from any non-combustion source.
- B.2 Emergency: Any act of God, but only if the owner of the property from which fugitive dust emissions originate establishes for the Feather River Air Quality Management District, by a preponderance of evidence, that he or she took reasonable precautions in light of the relevant facts and circumstances to minimize emissions.
- B.3 Property Line: Adjacent properties which are owned by the same person shall be considered the same property for the purpose of determining the property line.

#### C. REQUIREMENTS

A person shall take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line from which the emission originates, from any construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation.

Reasonable precautions shall include, but are not limited to:

- C.1 use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, construction of roadways, or the clearing of land;
- C.2 application of asphalt, oil, water, or suitable chemical on dirt roads, material stockpiles, and other surfaces which can give rise to airborne dusts;
- C.3 other means approved by the Air Pollution Control Officer.

#### D. EXEMPTIONS

The provisions of this Rule shall not apply to the following:

- D.1 Agricultural Operations
- D.2 Currently unworked land designated as reclaimed for agriculture
- D.3 An Emergency
- D.4 Unpaved roads open to public travel (this inclusion shall not apply to industrial or commercial facilities).

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## **II. State Laws**

## California Health and Safety Code

**Section 41700**. Except as otherwise provided in Section 41705, no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

**Section 41701**. Except as otherwise provided in Section 41704, or Article 2 (commencing with Section 41800) of this chapter other than Section 41812, or Article 2 (commencing with Section 42350) of Chapter 4, no person shall discharge into the atmosphere from any source whatsoever any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three minutes in any one hour which is: (a) As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines, or (b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subdivision (a).

## **California Vehicle Code**

Section 23114 requires: No vehicle shall transport any aggregate material upon a highway unless the material is covered. Exception 23114(e)(4): Vehicles transporting loads of aggregate materials shall not be required to cover their loads if the load, where it contacts the sides, front, and back of the cargo container area, remains six inches from the upper edge of the container area, and if the load does not extend, at its peak, above any part of the upper edge of the cargo container area. For purposes of this section, "aggregate material" means rock fragments, pebbles, sand, dirt, gravel, cobbles, crushed base, asphalt, and other similar materials.

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#### FRAQMD - FUGITIVE DUST CONTROL MITIGATION MEASURES

Sources: FRAQMD Indirect Source Review Guidelines and Best Available Mitigation Measures compiled by the air districts of the Greater Sacramento Region and approved for implementation by the FRAQMD Board of Directors.

<u>All grading operations</u> on a project should be suspended when winds exceed 20 miles per hour or when winds carry dust beyond the property line despite implementation of all feasible dust control measures.

<u>Construction sites shall be watered</u> as directed by the Department of Public Works or Air Quality Management District and as necessary to prevent fugitive dust violations.

An operational water truck should be onsite at all times. Apply water to control dust as needed to prevent visible emissions violations and offsite dust impacts.

Onsite dirt piles or other stockpiled particulate matter should be covered, wind breaks installed, and water and/or soil stabilizers employed to reduce wind blown dust emissions. Incorporate the use of approved non-toxic soil stabilizers according to manufacturer's specifications to all inactive construction areas.

<u>All transfer processes</u> involving a free fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions.

<u>Apply approved chemical soil stabilizers</u> according to the manufacturers' specifications, to allinactive construction areas (previously graded areas that remain inactive for 96 hours) including unpaved roads and employee/equipment parking areas.

<u>To prevent track-out</u>, wheel washers should be installed where project vehicles and/or equipment exit onto paved streets from unpaved roads. Vehicles and/or equipment shall be washed prior to each trip. Alternatively, a gravel bed may be installed as appropriate at vehicle/equipment site exit points to effectively remove soil buildup on tires and tracks to prevent/diminish track-out.

<u>Paved streets shall be swept</u> frequently (water sweeper with reclaimed water recommended; wet broom) if soil material has been carried onto adjacent paved, public thoroughfares from the project site.

<u>Provide temporary traffic control</u> as needed during all phases of construction to improve traffic flow, as deemed appropriate by the Department of Public Works and/or Caltrans and to reduce vehicle dust emissions. An effective measure is to enforce vehicle traffic speeds at or below 15 mph.

<u>Reduce traffic speeds</u> on all unpaved surfaces to 15 miles per hour or less and reduce unnecessary vehicle traffic by restricting access. Provide appropriate training, onsite enforcement, and signage.

Reestablish ground cover on the construction site as soon as possible and prior to final occupancy, through seeding and watering.

<u>Disposal by Burning</u>: Open burning is yet another source of fugitive gas and particulate emissions and shall be prohibited at the project site. No open burning of vegetative waste (natural plant growth wastes) or other legal or illegal burn materials (trash, demolition debris, et. al.) may be conducted at the project site. Vegetative wastes should be chipped or delivered to waste to energy facilities (permitted biomass facilities), mulched, composted, or used for firewood. It is unlawful to haul waste materials offsite for disposal by open burning.

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# **Fugitive Dust Control Plan**

This plan, upon signature and submittal to the FRAQMD, will serve as an approved Fugitive Dust Control Plan to be implemented at the designated site. This plan must be submitted by the project proponent and received at the air district prior to start of work.

The approved plan serves as an acknowledgment by the project proponent of their duty to address state and local laws governing fugitive dust emissions and the potential for first offense issuance of a Notice of Violation by the air district where violations are substantiated by District staff.

<ul><li>Site Location:</li></ul>				
<ul> <li>Project Type (circle</li> </ul>	e all that apply): Resider	ntial Commercial	Industrial	Transportation
List of responsible	persons:			
Office (name, title,	address, phone):			
Field (name, title, p	ohone):			
<ul> <li>Projected Start and</li> </ul>	l End Dates:			
Project Proponent:	Printed Name		Con	npany/Phone
Signature:		Title:		
state and local fugitive project proponent to e	ent I acknowledge that I I dust emission laws and nsure that appropriate maint fugitive dust mitigation this project.	understand that it aterials and instruc	is my respon ctions are ava	nsibility as the ailable to site
aware of fugitive dust	that it is my responsibility control laws, requirement are to be implemented a	ts, and available m	itigation tech	nniques, and that
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**Please Submit to**: FRAQMD, 938 14<sup>th</sup> Street, Marysville, CA 95901 Attn: Planning Phone: 530-634-7659 x202 FAX: 530-634-7660 Email: lmatlock@fraqmd.org