Appendix C

Air Quality Data

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Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Applegate EIR (PCAPCD)\Urbemis\Applegate_construction_only.urb924

Project Name: Applegate-Construction Only

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 5/1/2012-6/29/2012 Active Days: 44	5.88	44.25	27.95	0.00	0.02	2.72	2.75	0.01	2.51	2.51	5,620.23
Trenching 05/01/2012-06/29/2012	3.23	27.20	14.97	0.00	0.01	1.41	1.42	0.00	1.30	1.30	3,656.58
Trenching Off Road Diesel	3.18	27.12	13.40	0.00	0.00	1.41	1.41	0.00	1.29	1.29	3,451.86
Trenching Worker Trips	0.05	0.08	1.57	0.00	0.01	0.00	0.01	0.00	0.00	0.01	204.72
Trenching 05/01/2012-08/31/2012	2.65	17.05	12.98	0.00	0.01	1.31	1.32	0.00	1.21	1.21	1,963.64
Trenching Off Road Diesel	2.59	16.96	11.21	0.00	0.00	1.31	1.31	0.00	1.20	1.20	1,733.33
Trenching Worker Trips	0.05	0.09	1.77	0.00	0.01	0.01	0.02	0.00	0.00	0.01	230.31
Time Slice 7/2/2012-7/31/2012 Active Days: 22	7.00	58.22	31.81	0.00	0.02	3.21	3.24	0.01	2.95	2.96	7,120.11
Trenching 05/01/2012-08/31/2012	2.65	17.05	12.98	0.00	0.01	1.31	1.32	0.00	1.21	1.21	1,963.64
Trenching Off Road Diesel	2.59	16.96	11.21	0.00	0.00	1.31	1.31	0.00	1.20	1.20	1,733.33
Trenching Worker Trips	0.05	0.09	1.77	0.00	0.01	0.01	0.02	0.00	0.00	0.01	230.31
Trenching 07/02/2012-08/31/2012	4.35	41.17	18.82	0.00	0.01	1.90	1.91	0.00	1.75	1.75	5,156.47
Trenching Off Road Diesel	4.30	41.08	17.05	0.00	0.00	1.90	1.90	0.00	1.74	1.74	4,926.16
Trenching Worker Trips	0.05	0.09	1.77	0.00	0.01	0.01	0.02	0.00	0.00	0.01	230.31

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Time Slice 8/1/2012-8/31/2012 Active Days: 23	**8.67**	**69.56**	**40.75**	**0.01**	**0.03**	**4.05**	**4.08**	**0.01**	**3.72**	**3.73**	**8,496.38**
Fine Grading 08/01/2012-09/30/2012	1.68	11.33	8.94	0.00	0.01	0.84	0.84	0.00	0.77	0.77	1,376.27
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	1.65	11.28	7.95	0.00	0.00	0.83	0.83	0.00	0.77	0.77	1,248.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	127.95
Trenching 05/01/2012-08/31/2012	2.65	17.05	12.98	0.00	0.01	1.31	1.32	0.00	1.21	1.21	1,963.64
Trenching Off Road Diesel	2.59	16.96	11.21	0.00	0.00	1.31	1.31	0.00	1.20	1.20	1,733.33
Trenching Worker Trips	0.05	0.09	1.77	0.00	0.01	0.01	0.02	0.00	0.00	0.01	230.31
Trenching 07/02/2012-08/31/2012	4.35	41.17	18.82	0.00	0.01	1.90	1.91	0.00	1.75	1.75	5,156.47
Trenching Off Road Diesel	4.30	41.08	17.05	0.00	0.00	1.90	1.90	0.00	1.74	1.74	4,926.16
Trenching Worker Trips	0.05	0.09	1.77	0.00	0.01	0.01	0.02	0.00	0.00	0.01	230.31
Time Slice 9/3/2012-9/28/2012 Active Days: 20	1.68	11.33	8.94	0.00	0.01	0.84	0.84	0.00	0.77	0.77	1,376.27
Fine Grading 08/01/2012-09/30/2012	1.68	11.33	8.94	0.00	0.01	0.84	0.84	0.00	0.77	0.77	1,376.27
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	1.65	11.28	7.95	0.00	0.00	0.83	0.83	0.00	0.77	0.77	1,248.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	127.95
Time Slice 10/1/2012-12/31/2012 Active Days: 66	1.02	6.59	4.70	0.00	0.00	0.56	0.56	0.00	0.52	0.52	701.23
Building 10/01/2012-12/31/2012	1.02	6.59	4.70	0.00	0.00	0.56	0.56	0.00	0.52	0.52	701.23
Building Off Road Diesel	1.02	6.59	4.70	0.00	0.00	0.56	0.56	0.00	0.52	0.52	701.23
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Time Slice 1/1/2013-2/28/2013 Active Days: 43	1.55	10.54	8.81	0.00	0.01	0.75	0.76	0.00	0.69	0.70	1,376.31
Demolition 01/01/2013-02/28/2013	1.55	10.54	8.81	0.00	0.01	0.75	0.76	0.00	0.69	0.70	1,376.31
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	1.53	10.50	7.91	0.00	0.00	0.75	0.75	0.00	0.69	0.69	1,248.32
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.03	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.00	127.99

Phase Assumptions

Phase: Demolition 1/1/2013 - 2/28/2013 - Demolish Applegate WWTP

Building Volume Total (cubic feet): 29000

Building Volume Daily (cubic feet): 0

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Fine Grading 8/1/2012 - 9/30/2012 - Site work for new pump station

Total Acres Disturbed: 0

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Trenching 5/1/2012 - 8/31/2012 - Pipeline installation-trenched sections

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

4 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

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1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Trenching 5/1/2012 - 6/29/2012 - Pipeline installation-trenchless sections
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day
2 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
2 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Trenching 7/2/2012 - 8/31/2012 - Upsizing-7,700 new feet of pipeline
Off-Road Equipment:
1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day
2 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
1 Generator Sets (549 hp) operating at a 0.74 load factor for 8 hours per day
1 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day
3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Building Construction 10/1/2012 - 12/31/2012 - Constructing new pump station
Off-Road Equipment:
2 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

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Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Applegate EIR (PCAPCD)\Urbemis\Applegate_Onroad.urb924

Project Name: Applegate-Onroad Emissions

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	0.03	0.05	0.94	0.00	0.01	0.00	0.01	0.00	0.00	0.00	122.83
2013 TOTALS (lbs/day unmitigated)	0.01	0.01	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.96

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.19	0.83	2.23	0.00	0.01	0.01	969.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.04	0.05	0.47	0.00	0.08	0.02	48.27

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SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.23	0.88	2.70	0.00	0.09	0.03	1,017.52

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Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Applegate EIR (PCAPCD)\Urbemis\Applegate_striping_truck.urb924

Project Name: Applegate-Onroad Emissions

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 8/30/2012-8/30/2012 Active Days: 1	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.40
Building 08/30/2012-08/30/2012	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.40
Building Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.40

Phase Assumptions

Phase: Building Construction 8/30/2012 - 8/30/2012 - Pipeline installation-trenched sections

Off-Road Equipment:

Calculation of GHGs from Pump Stations

PG&E Emission Factor	
641.35	lbsCO2/MWh

Source: PG&E PUP report for 2008

Emission Factors for Calculating GHGs		
CO2	724.12	lbs/MWh
CH4	0.0302	lbs/MWh
N2O	0.0081	lbs/MWh

Source: California Climate Action Registry 2009

1 kWh =	0.001	MWh
1LB=	0.000454	metric tons
1 ton =	0.907185	metric tons

Energy used = 55.40000 kWh/day*

55.4 kWh/day = 0.0554 MWh/day

Calculation of GHG Emissions Resulting from Proposed Project Operations (lbs/day)	
CO2	40.11625
CH4	0.00167
N2O	0.00045

*From project BDR report, page 51 table 5-1

Calculation of GHG Emissions Resulting from Proposed Project Operations (metric tons/year)	
CO2	6.64170
CH4	0.00028
N2O	0.00007

Calculation of CO2e Resulting from the Proposed Project (metric tons/year)	
CO2e of CO2[a]	6.64170
CO2e of CH4[b]	0.00637
CO2e of N2O[c]	0.02199
Total CO2e	6.67006

[a] GWP of CO2 = 1

[b] GWP of CH4 = 23

[c] GWP of N2O = 296

Source: California Climate Action Registry 2009

Fuel Type	CO_2 Emission Factor (kilogram CO_2/gallon)
Diesel	10.15
Source: California Climate Action Registry 2009	

1 metric ton (t) =	1,000	kilograms (kg)

Back-Calculation to Gallons of Diesel Fuel from Estimated CO_2 Calculated by URBEMIS 2007				
		Total CO_2/Phase (t)	Total CO_2/Phase (kg)	Gallons of Diesel (gal)
Site Work for new pump station				
Offroad (construction)		1,376.27	1,376,270.00000	135,593.10345
Onroad (foreman trucks)		122.82	122,820.00000	12,100.49261
Total		1499.09	1,499,090.00000	147,693.59606
Constructing new pump station				
Offroad (construction)		701.23	701,230.00000	69,086.69951
Onroad (foreman trucks)		122.82	122,820.00000	12,100.49261
Total		824.05	824,050.00000	81,187.19212
Pipeline installation-trenched sections				
Offroad (construction)		1,733.33	1,733,330.00000	170,771.42857
Onroad (foreman trucks)		122.82	122,820.00000	12,100.49261
Onroad (striping truck)		9.40	9,400.00000	926.10837
Total		1865.55	1,865,550.00000	183,798.02956
Pipeline installation-trenchless sections				
Offroad (construction)		3,656.58	3,656,580.00000	360,254.18719
Onroad (foreman trucks)		122.82	122,820.00000	12,100.49261
Total		3779.4	3,779,400.00000	372,354.67980
Demolish Applegate WWTP				
Offroad (construction)		1,376.31	1,376,310.00000	135,597.04433
Onroad (foreman trucks)		122.82	122,820.00000	12,100.49261
Total		1499.13	1,499,130.00000	147,697.53695
Upsizing				
Offroad (construction)		5,156.47	5,156,470.00000	508,026.60099
Onroad (foreman trucks)		122.82	122,820.00000	12,100.49261
Onroad (striping truck)		9.40	9,400.00000	926.10837
Total		5288.69	5,288,690.00000	521,053.20197

Vehicle Type/ Fuel Type	N_2O (grams/gallon)	CH_4 (grams/ gallon)
Construction/Diesel Fuel	0.26	0.58
Source: California Climate Action Registry 2009		

	Unmitigated Construction Greenhouse Gas Emissions Estimates (grams)			
	Year	**Gallons of Diesel**	**N_2O**	**CH_4**
Site Work for new pump station	**2012**			
Offroad (construction)		135,593.10345	35254.2069	78644
Onroad (foreman trucks)		12,100.49261	3146.128079	7018.285714
Total		147,693.59606	38400.33498	85662.28571
Constructing new pump station	**2012**			
Offroad (construction)		69,086.69951	17962.54187	40070.28571
Onroad (foreman trucks)		12,100.49261	3146.128079	7018.285714
Total		81,187.19212	21108.66995	47088.57143
Pipeline installation-trenched sections	**2012**			
Offroad (construction)		170,771.42857	44400.57143	99047.42857
Onroad (foreman trucks)		12,100.49261	3146.128079	7018.285714
Onroad (striping truck)		926.10837	240.7881773	537.1428571
Total		183,798.02956	47787.48768	106602.8571
Pipeline installation-trenchless sections	**2012**			
Offroad (construction)		360,254.18719	93666.08867	208947.4286
Onroad (foreman trucks)		12,100.49261	3146.128079	7018.285714
Total		372,354.67980	96812.21675	215965.7143
Demolish Applegate WWTP	2013			
Offroad (construction)		135,597.04433	35255.23153	78646.28571
Onroad (foreman trucks)		12,100.49261	3146.128079	7018.285714
Total		147,697.53695	38401.35961	85664.57143
Upsizing	2012			
Offroad (construction)		508,026.60099	132086.9163	294655.4286
Onroad (foreman trucks)		12,100.49261	3146.128079	7018.285714
Onroad (striping truck)		926.10837	240.7881773	537.1428571
Total		521,053.20197	135473.8325	302210.8571

Greenhouse Gas	Global Warming Potential (GWP)
N_2O	296
CH_4	23
Source: California Climate Action Registry 2009	

1 gram (g) =	0.000001 t

	Unmitigated Construction Greenhouse Gas Emissions Estimates (metric tons)					
	Year	N_2O	N_2O CO_2e	CH_4	CH_4 CO_2e	Total CO_2e
Site Work for new pump station	**2012**					
Offroad (construction)		**0.035254207**	**10.43524524**	**0.078644**	**1.808812**	**1,388.51**
Onroad (foreman trucks)		**0.003146128**	**0.931253911**	**0.007018286**	**0.161420571**	**123.91**
Total		**0.038400335**	**11.36649915**	**0.085662286**	**1.970232571**	**1,512.43**
Constructing new pump station	**2012**					
Offroad (construction)		**0.017962542**	**5.316912394**	**0.040070286**	**0.921616571**	**707.47**
Onroad (foreman trucks)		**0.003146128**	**0.931253911**	**0.007018286**	**0.161420571**	**123.91**
Total		**0.02110867**	**6.248166305**	**0.047088571**	**1.083037143**	**831.38**
Pipeline installation-trenched sections	**2012**					
Offroad (construction)		**0.044400571**	**13.14256914**	**0.099047429**	**2.278090857**	**1,748.75**
Onroad (foreman trucks)		**0.003146128**	**0.931253911**	**0.007018286**	**0.161420571**	**123.91**
Onroad (striping truck)		**0.000240788**	**0.0712733**	**0.000537143**	**0.012354286**	**9.48**
Total		**0.047787488**	**14.14509635**	**0.106602857**	**2.451865714**	**1,882.15**
Pipeline installation-trenchless sections	**2012**					
Offroad (construction)		**0.093666089**	**27.72516225**	**0.208947429**	**4.805790857**	**3,689.11**
Onroad (foreman trucks)		**0.003146128**	**0.931253911**	**0.007018286**	**0.161420571**	**123.91**
Total		**0.096812217**	**28.65641616**	**0.215965714**	**4.967211429**	**3,813.02**
Demolish Applegate WWTP	2013					
Offroad (construction)		**0.035255232**	**10.43554853**	**0.078646286**	**1.808864571**	**1,388.55**
Onroad (foreman trucks)		**0.003146128**	**0.931253911**	**0.007018286**	**0.161420571**	**123.91**
Total		**0.03840136**	**11.36680244**	**0.085664571**	**1.970285143**	**1,512.47**
Upsizing	2012					**0.00**
Offroad (construction)		**0.132086916**	**39.09772721**	**0.294655429**	**6.777074857**	**5,202.34**
Onroad (foreman trucks)		**0.003146128**	**0.931253911**	**0.007018286**	**0.161420571**	**123.91**
Onroad (striping truck)		**0.000240788**	**0.0712733**	**0.000537143**	**0.012354286**	**9.48**
Total		**0.135473833**	**40.10025442**	**0.302210857**	**6.950849714**	**5,335.74**

Total 2012		**0.339582542**	**100.5164324**	**0.757530286**	**17.42319657**	**13374.71963**
Total 2013		**0.096812217**	**28.65641616**	**0.215965714**	**4.967211429**	**3813.023628**

Pounds per day

Phase	# of days per phase	ROG	NOx	CO	PM10	PM2.5	CO2
Site Work for new pump station	**43.3**						
Offroad (construction)		1.68	11.33	8.94	0.84	0.77	1,376.27
Onroad (foreman trucks)		0.01	0.01	0.29	0.01	0	122.82
Total		1.69	11.34	9.23	0.85	0.77	1499.09
Constructing new pump station	**64.95**						
Offroad (construction)		1.02	6.59	4.7	0.56	0.52	701.23
Onroad (foreman trucks)		0.01	0.01	0.29	0.01	0	122.82
Total		1.03	6.6	4.99	0.57	0.52	824.05
Pipeline installation-trenched sections	**86.6**						
Offroad (construction)		2.59	16.96	11.21	1.31	1.2	1,733.33
Onroad (foreman trucks)		0.01	0.01	0.29	0.01	0	122.82
Onroad (striping truck)		0	0	0.08	0	0	9.40
Total		2.6	16.97	11.58	1.32	1.2	1865.55
Pipeline installation-trenchless sections	**43.3**						
Offroad (construction)		3.23	27.2	14.97	1.42	1.3	3,656.58
Onroad (foreman trucks)		0.01	0.01	0.29	0.01	0	122.82
Total		3.24	27.21	15.26	1.43	1.3	3779.4
Demolish Applegate WWTP	**43.3**						
Offroad (construction)		1.55	10.54	8.81	0.76	0.7	1,376.31
Onroad (foreman trucks)		0.01	0.01	0.29	0.01	0	122.82
Total		1.56	10.55	9.1	0.77	0.7	1499.13
Upsizing	**43.3**						
Offroad (construction)		4.35	41.17	18.82	1.91	1.75	5,156.47
Onroad (foreman trucks)		0.01	0.01	0.29	0.01	0	122.82
Onroad (striping truck)		0	0	0.08	0	0	9.40
Total		4.36	41.18	19.19	1.92	1.75	5288.69

Tons per year

Phase	ROG	NOx	CO	PM10	PM2.5	CO2
Site Work for new pump station						
Offroad	0.036372	0.245295	0.193551	0.018186	0.016671	29.7962455
Onroad	0.002165	0.002165	0.062785	0.002165	0	26.59053
Constructing new pump station						
Offroad	0.033125	0.21401	0.1526325	0.018186	0.016887	22.77244425
Onroad	0.000325	0.000325	0.00941775	0.000325	0	3.9885795
Pipeline installation-trenched sections						
Offroad	0.112147	0.734368	0.485393	0.056723	0.05196	75.053189
Onroad (foreman trucks)	0.000433	0.000433	0.012557	0.000433	0	5.318106
Onroad (striping truck)	0	0	0.003464	0	0	0.40702
Pipeline installation-trenchless sections						
Offroad	0.06993	0.58888	0.3241005	0.030743	0.028145	79.164957
Onroad	0.000217	0.000217	0.0062785	0.000217	0	2.659053
Demolish Applegate WWTP (2013)						
Offroad	0.033558	0.228191	0.1907365	0.016454	0.015155	29.7971115
Onroad	0.000217	0.000217	0.0062785	0.000217	0	2.659053
Upsizing						
Offroad	0.094178	0.891331	0.407453	0.041352	0.037888	111.6375755
Onroad (foreman trucks)	0.000217	0.000217	0.0062785	0.000217	0	2.659053
Onroad (striping truck)	0	0	0.001732	0	0	0.20351

ASBESTOS DUST MITIGATION PLAN (ADMP) GUIDANCE

FOR NATURALLY-OCCURRING ASBESTOS (NOA)

PLACER COUNTY
AIR POLLUTION CONTROL DISTRICT

ASBESTOS DUST MITIGATION PLAN GUIDANCE

CONTENTS:

1. Introduction

This Guidance addresses the requirements of the Placer County Air Pollution Control District (District) for the control of dust from construction, excavation, and grading activities, in areas where naturally occurring asbestos has been found and in the areas where naturally occurring asbestos is most likely to be found.

Asbestiform minerals belonging to the serpentine or amphibole mineral groups are found in many areas throughout California and are abundant in the Sierra foothills. They are commonly exposed near faults. Ultramafic or serpentine rock, which often contains asbestos, has been used in surfacing applications subject to pedestrian, vehicular, and recreational use. Activity in areas with asbestos-containing rock or soil may create dust emissions containing asbestos fibers. All types of asbestiform minerals are considered hazardous with no safe exposure level established for non-occupational exposures. While exposure to low levels of asbestos for short periods of time is thought to pose minimal risk, asbestos fibers can penetrate body tissues and remain in lung or abdominal areas for a long time. Asbestosis is widespread scarring of lung tissue caused by breathing air contaminated with asbestos dust or fibers. Asbestos inhalation also can cause the two layers of membrane covering the lungs (the pleura) to thicken. The more a person is exposed to asbestos fibers, the greater the risk of developing asbestos-related diseases including lung cancer and rarely, mesotheliomas – asbestos-caused tumors in the pleura. The illnesses caused by asbestos may not be noticed for twenty years or more, with mesotheliomas usually developing 30 to 40 years after exposure.[1]

Asbestos is classified as a known human carcinogen by state, federal, and international agencies, and as a toxic air contaminant by the Air Resources Board. California Code of Regulations, Title 17, Section 93105, Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations (ATCM), applies to earthwork that disturbs, or potentially disturbs, naturally occurring asbestos. ATCM requirements are applicable within Placer County and enforceable by Placer County Air Pollution Control District. This Guidance, and the Asbestos Dust Mitigation Plan Instructions and Application Form, conform to the ATCM and Placer County APCD Rule 228, Fugitive Dust.

Asbestos as defined by the State's ATCM includes only the group of six commercially important silicate minerals of fibrous or asbestiform habit having properties of high tensile strength, flexibility, chemical resistance, and heat resistance. Such properties made these minerals useful in many manufactured products and industrial processes during the twentieth century. The six types of asbestos are chrysotile, crocidolite (asbestiform riebeckite), amosite (asbestiform cummingtonite, grunerite), asbestiform tremolite, asbestiform actinolite, and asbestiform anthophylite. However, many other minerals such as brucite, erionite, talc, tourmaline, palygorskite, sepiolite, and others can crystallize in the fibrous habit (asbestiform) under the right conditions.[2] In this context, "asbestiform" means the unusual crystallization habit of a mineral when the crystals are thin, hair-like fibers. Historically, the definition of asbestiform habit was based primarily on appearance, and the properties were only implied. At present, the definition of asbestiform habit is often augmented to include a statement on the properties of asbestiform fibers, i.e., shape; enhanced strength, flexibility, and durability; diameter-dependent strength; and unique surfaces. The fibers of asbestos are good examples of the asbestiform habit.[3] For purposes of exemptions from ADMP requirements and air sampling analyses, when it is required, all asbestiform structures exhibiting an aspect ratio of greater than 3:1 must be counted as asbestos.

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[1] THE MERCK MANUAL OF MEDICAL INFORMATION, 1997, pg. 182

[2] Zoltai, 1981; Skinner and Others, 1988, Special Publication 124, The Mineralogy of Asbestos, Page 9

[3] National Research Council, 1984, Special Publication 124, The Mineralogy of Asbestos, Page 20

Placer County Air Pollution Control District (District) requires that if an area to be disturbed is ***greater than one acre***, an owner/operator subject to asbestos ATCM requirements or meeting criteria in subparagraph 2, below, must submit an Asbestos Dust Mitigation Plan (ADMP) to the Air Pollution Control Officer (APCO). An approved plan must be in place prior to the start of any applicable activity, or upon discovery of naturally occurring asbestos, serpentine, or ultramafic rock. The Asbestos Dust Mitigation Plan Application Form may be found in Appendix C.

For **areas of one acre or less** but otherwise meeting criteria of subparagraphs 2.A. and 2.B. below, the applicable ATCM, and subparagraph 5 requirements must be met.

A failure to implement required dust control measures, or to submit an ADMP, or the action of conducting operations without a District approved ADMP when one is required, is punishable by penalties of up to $25,000 per violation if the failure is due to negligence, with each day during any portion of which a violation occurs being a separate offense.

2. Applicability

Unless exempted below, an Asbestos Dust Mitigation Plan under this Guidance is required for any construction project or construction related activity where an area to be disturbed is greater than one acre and meets any of the following criteria:

A. The area:
   1) Is located in a Geographic Ultramafic Rock Unit (GURU) area "most likely" to contain NOA as indicated by the CGS (Department of Conservation, California Geologic Survey) 2006 map entitled, "RELATIVE LIKELIHOOD FOR THE PRESENCE OF NATURALLY OCCURRING ASBESTOS IN PLACER COUNTY, CALIFORNIA," and/or its derivative (vicinity) maps; or
   2) Has naturally occurring asbestos, serpentine or ultramafic rock as determined by owner/operator, registered geologist or the District APCO; or

B. Naturally occurring asbestos, serpentine, or ultramafic rock is discovered by the owner/operator, a registered geologist, or the District Air Pollution Control Officer (APCO) in the area to be disturbed after the start of any construction related activity.

Federal 29 CFR Part 1926.1101, Asbestos Standard for the Construction Industry, Section (k)(1), Communication of Hazards requires that employers, owners/operators identify the presence, location, and quantity of asbestos, and tell prospective bidders, employees etc. in the areas. Particularly workers in areas where asbestos is present, including "(G) Excavation which may involve exposure to asbestos as a natural constituent which is not related to asbestos mining and milling activities" are required to complete basic non-accredited training pursuant to **8 CCR Division 1, Chapter 4 Subchapter 4, Article 4, Section 1529**.

3. General Exemptions

***Geologic Evaluation*:** The APCO may provide an exemption from the requirement for an ADMP submittal, for any property that meets the criteria in subparagraph 2.A. if a registered geologist has conducted a geologic evaluation of the property and determined that no serpentine, ultramafic rock or asbestos is likely to be found in the area to be disturbed. For purposes of this geologic evaluation, "asbestos" shall include all asbestiform minerals – structures with an aspect ratio of 3:1 or greater. Before an exemption can be granted, the owner/operator must provide a copy of a report detailing the geologic evaluation to the APCO for approval.

A. At a minimum, the geologic evaluation must include items as outlined in Appendix A. **Geologic Evaluation Report Requirements**.

B. The District may request any additional tests or other information needed to evaluate an application for exemption.
C. The District shall grant or deny a request for an exemption within 90 days of the receipt of a complete application.
D. If the request for an exemption is denied, the APCO shall provide written reasons for the denial.
E. Expiration of the Geologic Exemption: If the owner/operator discovers any naturally-occurring asbestos, serpentine, or ultramafic rock in the area to be disturbed after the exemption is granted, then:
    1) The owner/operator must comply with the ADMP requirement;
    2) The owner/operator must report the discovery of the naturally-occurring asbestos, serpentine, or ultramafic rock to the APCO no later than the next business day; and
    3) The Geologic Exemption shall expire and cease to be effective.

Agriculture and Timber Harvesting Operations are exempt except for construction of roads and buildings according to the **Requirements for Road Construction** and **Requirements for Construction and Grading Operations** sections below.

Owners/operators engaged in ***Sand and Gravel Operations*** processing materials from an alluvial deposit only, may seek an exemption from the APCO. The District must grant or deny such a request for an exemption within 90 days of the receipt of a complete application. If denied, the APCO shall provide written reasons for denial.

Note: The ATCM contains an additional exemption for ***Homeowners and Tenants***, but dust control provisions of the District's Rule 228, Fugitive Dust, negate this exemption.

4. Requirements for Road Construction and Maintenance

The following represents the Asbestos Dust Mitigation Plan requirements applicable to road construction and maintenance activities that are not part of a construction or grading project, quarry, or surface mine. Persons engaged in road construction and related activities that meet criteria set forth in subparagraph 2.A. must assure the following conditions are met:

A. The APCO is notified in writing a minimum of fourteen days prior to the activity, or per a District-approved schedule;
B. The dust control measures outlined in Appendix B, **Road Construction and Maintenance Dust Control Measures** are implemented during any related activity; and
C. The operations and/or equipment must not cause any emission that is visible crossing the project boundaries.

Persons engaged in road construction and related activities that meet criteria set forth in subparagraph 2.B. must assure the following conditions are met:

D. The APCO is notified the next business day of the discovery that the area disturbed, or to be disturbed, meets the criteria in subparagraph 2.B.; and
E. The requirements of subparagraphs 4.B. and 4.C. are implemented within twenty-four hours of the discovery.

The following *exemptions* may apply in addition to those outlined in **General Exemptions**.

F. Subparagraph 2.A. requirements do not apply to Emergency Road Repairs for hazardous situations, and/or those activities related to hazard mitigation, if the owner/operator notifies the District of such actions and applicable conditions, no later than the next business day.
G. The APCO may provide an exemption from this section for activity occurring at a Remote Location.

1) The District shall grant or deny a request for an exemption within 90 days of the receipt of a complete application.
2) If the request for an exemption is denied, the APCO shall provide written reasons for the denial.

5. Requirements for Construction and Grading Operations

For all project **areas of one acre or less** but otherwise meeting criteria of subparagraphs 2.A. and 2.B., unless an alternate plan has been reviewed and approved in writing by the District, the following requirements shall be met – initiated at the start and maintained throughout the duration of the covered activity:

A. Vehicle speed at the site must be fifteen miles per hour or less;
B. Prior to ground disturbance, grading, or excavation, sufficient water must be applied to the area to be disturbed to prevent visible emissions from crossing the property line;
C. Storage piles must be kept adequately wetted, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile;
D. Equipment must be washed down before moving from the property onto a paved public road; and
E. Visible track-out on a paved public road must be cleaned using wet sweeping or a HEPA filter equipped vacuum device within twenty-four hours.

No person shall engage in any construction or grading operation where the **area to be disturbed is greater than one acre** unless:

F. An Asbestos Dust Mitigation Plan has been submitted to and approved by the District before the start of construction or grading activity. Plan provisions must be initiated at the start and maintained throughout the duration of the covered activity; and
G. For a project start date occurring prior to District approval, but for which an Asbestos Dust Mitigation Plan was submitted sixty days or more prior to the start date:
    1) The measures in subparagraphs 5.A. through 5.E. must be implemented and maintained until the District-approved asbestos dust mitigation plan is implemented; and
    2) The provisions of the District-approved asbestos dust mitigation plan must be implemented within fourteen days of District approval of the plan, and maintained throughout the remainder of the construction or grading activity.

No person shall engage in any construction or grading operation on property that meets criteria set forth under subparagraph 2.B., unless the following requirements are met:

H. The owner/operator notifies the District of the discovery of naturally-occurring asbestos, serpentine, or ultramafic rock no later than the next business day;
I. The measures in subparagraphs 5.A. through 5.E. are implemented within twenty-four hours after determining that the property meets the criteria in subparagraph 2.B.
J. For operations in which the area to be disturbed is **one acre or less**, the dust mitigation measures in subparagraphs 5.A. through 5.E. are maintained throughout the duration of the construction or grading activity; or
K. For operations in which the area to be disturbed is **greater than one acre**, the owner/operator must:
    1) Submit an asbestos dust mitigation plan to the District within fourteen days of the discovery of naturally-occurring asbestos, serpentine, or ultramafic rock;
    2) Maintain the dust mitigation measures in subparagraphs 5.A. through 5.E. until the provisions of the District-approved asbestos dust mitigation plan are implemented;
    3) Implement the provisions of the District-approved asbestos dust mitigation plan within fourteen days of district approval of the plan; and

4) Maintain the provisions of the District-approved asbestos dust mitigation plan throughout the remainder of the construction or grading activity.

The Asbestos Dust Mitigation Plan Application in Appendix C will serve as the applicant's Plan when properly completed, submitted to, and approved by the District. In lieu of the ADMP Application, an actual Plan adhering to the Asbestos Dust Mitigation Plan Requirements in Appendix D, must be submitted to, and approved by the District.

6. Asbestos Dust Mitigation Plan Requirements

Asbestos Dust Mitigation Plans must specify dust mitigation practices to ensure that no equipment or operation emits dust that is visible crossing the property line, in addition to other requirements found in the Asbestos Dust Mitigation Plan Requirements in Appendix D. Owners/operators may prepare their own original Plans by addressing all points and requirements found in the Asbestos Dust Mitigation Plan Requirements, or as stated above, the Asbestos Dust Mitigation Plan Application in Appendix C will serve as the applicant's Plan when properly completed, submitted to, and approved by the District.

Recommended Practices for Projects Requiring Asbestos Dust Mitigation Plans:

- A project kick-off meeting between the District, Contractors and Geologist should occur within a few days prior to the project start.
- Asbestos Dust Mitigation Plans should discuss the Geologist's involvement; such as how often the Geologist is to be onsite to check for asbestos or asbestos-containing materials, and if the Geologist will be responsible for separating and piling asbestos-containing materials.

7. Asbestos Dust Mitigation Plan Fees

The Filing Fee for the Asbestos Dust Mitigation Plan Application is, for example, $96.00 per the 2009/2010 Fee Schedule, subject to change annually, based on the minimum plan review estimate of one hour at the General Time and Materials Rate found in the **PLACER COUNTY AIR POLLUTION CONTROL DISTRICT FEE SCHEDULE,** TABLE 601 – M.1.

If an alternate or original Plan is submitted for approval in lieu of the ADMP Application in Appendix C, the fee is three times the Asbestos Dust Mitigation Plan Application Filing Fee ($288.00 for the July 1, 2009 – June 30, 2010 fiscal year), to be paid upon filing of the Plan. If an alternate Plan submitted requires greater than three hours evaluation by District staff, the applicant will be billed for the extra time at the General Time and Materials Rate found in the current **PLACER COUNTY AIR POLLUTION CONTROL DISTRICT FEE SCHEDULE,** TABLE 601 – M.1.

8. Record Keeping Requirements

The owner shall maintain all of the following records for at least seven years, except for the record of subparagraph 8.D., which shall be kept for at least two years, following the completion of the construction project:

A. The results of any air monitoring conducted at the request of the APCO;
B. The documentation for any geologic evaluation conducted on the property for the purposes of obtaining an exemption, except the archive of collected samples which may

be discarded at the expiration of the exemption or one year after the exemption is granted whichever is less;

C. The results of any asbestos bulk sampling that meets any of the following conditions:
   1) The asbestos bulk sampling was conducted by the owner/operator to document the applicability of, or compliance with this section; or
   2) The asbestos bulk sampling was done at the request of the District APCO; or
   3) Sampling was done at location(s) of on-site disposal of asbestiform containing soils; and

D. The Record of Control Implementation, actions to stabilize surface areas sufficient to establish location, type and date of treatment. Records shall be maintained and be readily accessible for two (2) years after the date of each entry and shall be provided to the District upon request and shall be open for inspection during unscheduled audits during normal business hours. (Rule 228 Section 503.1)

9. Air Monitoring for Asbestos

If the project is located in a Geographic Ultramafic Rock Unit (GURU) area "most likely" to contain NOA as indicated by the CGS (Department of Conservation, California Geologic Survey) 2006 map entitled, "RELATIVE LIKELIHOOD FOR THE PRESENCE OF NATURALLY OCCURRING ASBESTOS IN PLACER COUNTY, CALIFORNIA," and/or its derivative (vicinity) maps, and pursuant to the requirements of Health and Safety Code section 41511:

A. Air monitoring is required pursuant to Appendix E;
B. The APCO may require testing at any time or where projects are nearby (within 1000 feet of) receptors such as schools, hospitals, residential and commercial areas; and
C. The APCO may revise the asbestos dust mitigation plan on the basis of the results of the air monitoring.

NOTE: The purpose of sampling is to assess the effectiveness of engineering controls. **Area sampling results are not intended for purposes of assessing health risk.**

Federal 29 CFR Part 1926.1101, Asbestos Standard for the Construction Industry, Section (k)(1), Communication of Hazards requires that employers, owners/operators identify the presence, location, and quantity of asbestos, and tell prospective bidders, employees etc. in the areas. Particularly workers in areas where asbestos is present, including "(G) Excavation which may involve exposure to asbestos as a natural constituent which is not related to asbestos mining and milling activities" are required to complete basic non-accredited training pursuant to 8 CCR Division 1, Chapter 4 Subchapter 4, Article 4, Section 1529.

10. Test Methods

The following test methods shall be utilized:

A. Ultramafic Rock: The ultramafic rock composition of any material shall be determined using standard analysis techniques including, but not limited to, color index assessment, microscopic examination, petrographic analysis or rock thin sections, or chemical analysis techniques, such as X-ray fluorescence spectrometry or inductively coupled plasma analysis.

B. *Bulk Sampling Methods*: ARB Test Method 435, or an alternative asbestos bulk test method approved in writing by the Executive Officer of the California Air Resources Board, shall be used to determine the asbestos content of a bulk sample. For the purposes of determining compliance with this section, references in ARB Test Method

435 to "serpentine aggregate" shall mean "gravel" or other "bulk materials" to be tested for asbestos content.

C. *Analysis of Air Samples*: Analysis of all air samples shall follow the analytical method specified by the United States Environmental Protection Agency, Asbestos Hazard Emergency Response Act (AHERA) criteria for asbestos (40 CFR, Part 763 Subpart E, Appendix A, adopted October 30, 1987), with the following exceptions:
   1) The analytical sensitivity shall be 0.001 structures per cubic centimeter (0.001 s/cc); and
   2) All asbestiform structures with an aspect ratio greater than three to one (3:1) shall be counted irrespective of length.

D. The results of the analysis of air samples shall be reported as transmission electron microscopy (TEM) asbestos structures per cubic centimeter (s/cc).

11. Posting of Signs

Cal-OSHA regulations require hazard communication plans include signage and postings at job sites. The District requires compliance with Cal-OSHA regulations. Contact Cal-OSHA at (800) 963-9424 for information.

Additionally, for projects where an ADMP is required, warning Signs shall be posted at the main entrance(s) to the project for the duration of soil disturbance activities and at locations visible to persons passing the site if the site is adjacent to publicly accessed areas. Signs shall be posted in lettering of sufficient size to be readily visible and legible. The following wording is recommended: “Warning. Soils in the area may contain naturally occurring asbestos. Asbestos is a known carcinogen. Report excessive fugitive dust to the contractor at (contractor phone number), or PCAPCD: (530) 745-2330.” The sign(s) shall also identify the project name or street address.
Sample:

WARNING

PROJECT #555 AT 55 FIFTH AVE., AUBURN, CA

Soils in the area may contain Naturally Occurring Asbestos. Asbestos is a known carcinogen.

Report excessive fugitive dust to:

“XYZ Contracting” at (555) 555-5555, or

Placer County Air Pollution Control District at (530) 745-2300

12. Definitions.

The following definitions shall apply to this Guidance:

(1) "Access road" means any road extending from a public thoroughfare onto the property of a construction project, quarry, or surface mining operation.

(2) "Adequately wetted" means sufficiently moistened with water to minimize the release of particulate matter into the ambient air as determined by approved test method(s).

(3) "Agricultural operation" means activities necessary for the growing and harvesting of crops or raising of fowl or animals.

(4) "APCO" means the executive officer, air pollution control officer, or the designee of the executive officer or air pollution control officer of any air pollution control or air quality management district created or continued in existence pursuant to Part 3 (commencing with section 40000), Division 26, Health and Safety Code.

(5) "Approved asbestos bulk test method" means ARB Test Method 435 or an alternative asbestos bulk test method approved in writing by the Executive Officer of the California Air Resources Board.

(6) "ARB" means the California Air Resources Board.

(7) "ARB Test Method 435" means the test method specified in title 17, California Code of Regulations, section 94147.

(8) "Asbestos" means asbestiforms of the following minerals: chrysotile (fibrous serpentine), crocidolite (fibrous riebeckite), amosite (fibrous cummingtonite--grunerite), fibrous tremolite, fibrous actinolite, and fibrous anthophyllite. Please note that asbestos as defined by the ATCM includes only the six commercial asbestos minerals that are the most widely known asbestiform minerals. However, many other minerals such as brucite, erionite, talc, tourmaline, palygorskite, sepiolite, and others can crystallize in the fibrous habit (asbestiform) under the right conditions.[4]

(9) "Asbestos-containing material" means any material that has asbestos content of 0.25 percent or greater.

(10) “Asbestos-Containing Waste" or "ACW" means asbestos containing waste managed at a landfill as authorized by section 25143.7, chapter 6.5 of the California Health and Safety Code, which contains greater than (1%) friable asbestos by weight. Asbestos containing waste does not include waste contaminated with another hazardous waste as identified in chapter 11, division 4.5, Title 22, California Code of Regulations.

(11) "Asbestos Dust Mitigation Plan" means a detailed written document specifying measures that would be implemented to minimize the emissions of asbestos-laden dust.

(12) "Carry-out" or "track-out" means any bulk material that adheres to and agglomerates on the exterior surfaces of motor vehicles, haul trucks, and/or equipment, including tires, and that has fallen or been deposited onto a paved public roadway.

(13) "Construction," "grading," "construction or grading operation" and "construction or grading activity" mean any surface disturbance conducted with powered equipment or any related activity, including, but not limited to, all surface and subsurface cuts and fills, excavation, trenching, stockpiling, bulldozing, and landfills.

(14) "District" means any air pollution control or air quality management district created or continued in existence pursuant to Part 3 (commencing with section 40000), Division 26, Health and Safety Code.

(15) "Geographic ultramafic rock unit" means a geographic area that is designated as an ultramafic rock unit or ultrabasic rock unit, including the unit boundary line, on any of the maps referenced in Appendix A of the State ATCM.

[4] Zoltai, 1981; Skinner and Others, 1988, Special Publication 124, The Mineralogy of Asbestos, Page 9

(16) "Geologic evaluation" means an evaluation of a property to determine the presence of various types of rocks, including ultramafic rock, serpentinite, or other metamorphic derivatives of ultramafic rock.

(17) "Gravel pad" means a layer of gravel, rock, or crushed rock which is at least one inch or larger in diameter and less than five (5) percent silt content, maintained at the point of intersection of a paved public roadway and a work site entrance to dislodge mud, dirt, and debris from tires of motor vehicles and haul trucks prior to leaving a worksite.

(18) "Grizzly" means a device used to dislodge mud, dirt, and debris from the tires and undercarriage of motor vehicles and haul trucks prior to leaving the work site.

(19) "HEPA filter" means a High Efficiency Particulate Air filter used to remove particles less than one (1) micron in aerodynamic diameter and operates at removal efficiencies of 99.9 percent or greater.

(20) "Naturally occurring asbestos" means asbestos and asbestiform minerals that have not been processed in an asbestos mill.

(21) "Owner/operator" or "person" includes, but is not limited to:

(A) An individual, trust, firm, joint stock company, business concern, partnership, limited liability company, association, or corporation including, but not limited to, a government corporation;

(B) Any city, county, district, commission, the state or any department, agency, or political subdivision thereof, any interstate body, and the federal government or any department or agency thereof to the extent permitted by law; or

(C) A project proponent and any of its contractors or subcontractors.

(22) "Paving" means creating a cover consisting of Portland cement, asphalt, concrete, or chip seal.

(23) "Project Boundaries" means the right-of-way and any construction easements adjacent to and necessary for the purposes of a specific road construction project or maintenance activity.

(24) "Property" means any real property including, but not limited to, any contiguous parcel or parcels of land and anything attached to, or erected on it.

(25) "Quarrying" means the act of obtaining stone from the earth by means of cutting, digging, excavating, or blasting and includes processes used to convert the excavated material into commercial products.

(26) "Registered geologist" means an individual that is currently licensed as a geologist with the State of California, Department of Consumer Affairs, Board of Geology and Geophysicists.

(27) "Remote location" means any location that is at least one (1.0) mile from the location of a receptor. "Receptor" includes, but is not limited to, any hospital, school, day care center, work site, business, residence, and permanent campground. The distance to the nearest receptor is to be measured from the outermost limit of the area to be disturbed, or road surface, whichever is closer.

(28) "Road Construction and Maintenance" means the activities undertaken to build roads, highways, railroads, bridges, culverts, drains and other works incidental to road or highway construction, and maintenance activities that involve grading or excavation. Road Construction and Maintenance does not include the construction of rest stops, maintenance buildings, or parking lots. (Note: These excluded activities are subject to the **Requirements for Construction and Grading Operations** (subparagraph 5)).

(29) "Road surface" means the traveled way of a road and any shoulder that may extend up ten (10) feet from the edge of the traveled way.

(30) "Sand and Gravel Operation" means any facility operating in alluvial deposits.

(31) “Sensitive Receptor” means areas, facilities, or groups that may be more heavily impacted by various activities, which create air pollutants, based on nature of the contaminant. Examples include, but are not limited to, towns and villages, campgrounds, hospitals, nursing homes, schools, airports, public events, shopping centers.

(32) "Serpentine" means any form of the following hydrous magnesium silicate minerals: antigorite, lizardite, and chrysotile.

(33) "Serpentinite" means a rock consisting almost entirely of serpentine, although small amounts of other minerals such as magnetite, chromite, talc, brucite, and tremolite-actinolite may also be present. "Serpentinite" is a metamorphic derivative of the ultramafic rocks, peridotite, pyroxenite, or dunite.

(34) "Surface mining" means all, or any part of, the process involved in the mining of minerals on mined lands by removing overburden and mining directly from the mineral deposit, open-pit mining of minerals naturally exposed, mining by the auger method, dredging and quarrying, or surface work incident to an underground mine. "Surface mining" includes, but is not limited to, in place distillation or retorting or leaching, the production and disposal of mining waste, prospecting and exploratory activities or any activity subject to regulation under the Surface Mining and Reclamation Act of 1975, Public Resources Code section 2700 et seq.

(35) “Ultrabasic rock" means ultramafic rock.

(36) "Ultramafic rock" means an igneous rock composed of 90 percent or greater of one or a combination of the following iron/magnesium-rich, dark-colored silicate minerals: olivine, pyroxene, or more rarely amphibole. For the purposes of this section, "ultramafic rock" includes the following rock types: dunite, pyroxenite, and peridotite, and their metamorphic derivatives.

(37) "Visible emissions" means any particulate matter that is visually detectable without the aid of instruments other than corrective lenses.

Appendix A

Geologic Evaluation Report Requirements

The APCO may provide an exemption from the requirement for an ADMP submittal, for any property that is otherwise subject to ADMP requirements, if a registered geologist has conducted a geologic evaluation of the property and determined that no serpentine, ultramafic rock or asbestos is likely to be found in the area to be disturbed. For purposes of this geologic evaluation, "asbestos" shall include all asbestiform minerals – structures with an aspect ratio of 3:1 or greater.

Geologic investigations of naturally occurring asbestos should conform to SPECIAL PUBLICATION 124 GUIDELINES FOR GEOLOGIC INVESTIGATIONS OF NATURALLY OCCURRING ASBESTOS IN CALIFORNIA, by California Geological Survey, edited by John P. Clinkenbeard, Ronald K. Churchill, and Kiyoung Lee at the website www.consrv.ca.gov.

Geologic evaluation reports should conform to the State of California Department of Consumer Affairs GUIDELINES FOR ENGINEERING GEOLOGIC REPORTS accessible at the website www.dca.ca.gov/geology, and pursuant to the ATCM shall contain the following elements at a minimum:

1. A general description of the property and the proposed use;

2. A detailed site characterization which may include:
   A. A physical site inspection;
   B. Offsite geologic evaluation of adjacent property;
   C. Evaluation of existing geological maps and studies of the site and surrounding area;
   D. Development of geologic maps of the site and vicinity;
   E. Identification and description of geologic units, rock and soil types, and features that could be related to the presence of ultramafic rocks, serpentine, or asbestos mineralization; and
   F. A subsurface investigation to evaluate the nature and extent of geologic materials in the subsurface where vertical excavation is planned; methods of subsurface investigation may include, but are not limited to borings, test pits, trenching, and geophysical surveys;

3. A classification of rock types found must conform to the nomenclature based on the International Union of Geological Science system;

4. A description of the sampling procedures used;

5. A description of the analytical procedures used, which may include mineralogical analyses, petrographic analyses, chemical analyses, or analyses for asbestos content;

6. An archive of collected rock samples for third party; and

7. A geologic evaluation report documenting observations, methods, data, and findings. The format and content of the report should follow the Guidelines for the Assessment of Naturally Occurring Asbestos issued by the California Geologic Survey.

Appendix B

Road Construction and Maintenance Dust Control Measures

The following dust control measures shall be implemented during any road construction or maintenance activity:

1. Unpaved areas subject to vehicle traffic must be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, or covered with material that contains less than 0.25 percent asbestos; (District Rule 228 Section 401.1)

2. The speed of any vehicles and equipment traveling across unpaved areas must be no more than fifteen miles per hour unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment traveling more than 15 miles per hour from emitting dust that is visible crossing the project boundaries; (District Rule 228 Section 401.2)

3. Storage piles and disturbed areas not subject to vehicular traffic must be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, or covered material that contains less than 0.25 percent asbestos;

4. A person shall not cause or allow fugitive dust generated by active operations, an open storage pile, or a disturbed surface area, such that the fugitive dust is of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke as dark or darker in shade as that designated as No. 2 on the Ringelmann Chart (or 40% opacity), as published by the United States Bureau of Mines; (District Rule 228 Section 302) and,

5. Activities must be conducted so that no track-out from any road construction project is visible on any paved roadway open to the public.

Appendix C

Asbestos Dust Mitigation Plan Application

Complete and submit the following Asbestos Dust Mitigation Plan Application pages C-1 through C-7. This application, once completed, submitted to the District, and approved by the District, will stand as the applicant's Asbestos Dust Mitigation Plan.

Placer County
AIR POLLUTION CONTROL DISTRICT

ASBESTOS AIRBORNE TOXIC CONTROL MEASURE FOR CONSTRUCTION, GRADING, QUARRYING AND SURFACE MINING OPERATIONS
§ 93105, Title 17, California Code of Regulations

ASBESTOS DUST MITIGATION PLAN APPLICATION

1. FOR DISTRICT USE ONLY

Fees Due: No Fees Apply for Complete Application	Date Received by District
DISTRICT PLAN APPROVAL Per information contained in the submitted Asbestos Dust Mitigation Plan documents and Application, the Plan is: ☐ Approved ☐ Conditionally Approved ☐ Denied (See comments for who to contact if denied.)	

Comments

_____
_____
_____
_____

Signature_____ Date_____

Placer County Air Pollution Control Officer or Designee

2. GEOLOGIST INFORMATION

Name		
Address	City/State/Zip	
Contact	Phone	Fax

3. CONTRACTOR AND OWNER INFORMATION

Contractor Information		Owner Information	
Name		Name	
Address		Address	
City/State/Zip		City/State/Zip	
Contact		Contact	
Phone	Fax	Phone	Fax
E-mail Address		E-mail Address	

ASBESTOS DUST MITIGATION PLAN APPLICATION
PLACER COUNTY AIR POLLUTION CONTROL DISTRICT

4. PROJECT INFORMATION – DESCRIPTION	Assessor's Parcel Number (APN)
Project Name	Project Number
Estimated Size of Project (total acres):	Disturbed Surface Area (acres):
Brief Description of Project Including List of Equipment to be used. _____ _____ _____ _____	
Start Date	Estimated Completion Date

5. PROJECT INFORMATION – LOCATION
Location (List nearby cross streets or give detailed directions to location.) _____ _____
Address
City/State/Zip

6. MAP INFORMATION

Maps clearly indicating the following must be included:

- Location
- Property lines / boundaries
- Rights of way / easements
- Areas to be cleared or graded
- Trenching areas
- Excavation sites
- Storage areas / piles
- Staging areas for removal
- Truck routes
- On-site parking lots
- Landmarks and roads
- Sampling locations (label as positive or negative for asbestos)

7. PROJECT TYPE

Activity: (At least one selection required.)

- ☐ Construction
- ☐ Grading
- ☐ Road or Railway Construction
- ☐ Road Maintenance
- ☐ Housing Development
- ☐ Commercial Property Development
- ☐ Quarrying
- ☐ Surface Mining
- ☐ Trenching / Utilities Work
- ☐ Other (please describe)

_____

8. TRACK-OUT PREVENTION

The following control measure MUST be addressed:

- Any visible track-out on a paved public road where vehicles enter and exit the work area must be removed at the end of the workday or at least one time per day. Removal shall be accomplished by using wet sweeping or a HEPA filter equipped vacuum device.

Other control measures: (At least one selection required.)

- ☐ A gravel pad designed using good engineering practices to clean the tires of exiting vehicles
- ☐ A tire shaker
- ☐ A wheel wash system
- ☐ Pavement extending for not less than fifty (50) consecutive feet from the intersection with the paved public road
- ☐ Any other measure(s) as effective as the measures listed above (please describe)

_____
_____
_____

9. ACTIVE STORAGE PILES

Storage Piles must be stabilized by one of the following: (Check one.)

- ☐ Keep the surface adequately wetted
- ☐ Covering with tarps

10. INACTIVE STORAGE PILES

Control for disturbed surface areas and storage piles that will remain inactive for more than seven (7) days shall include one or more of the following: (At least one selection required.)

- ☐ Keep the surface adequately wetted
- ☐ Establishment and maintenance of surface crusting sufficient to satisfy the test in ATCM subsection 93105(h)(6)
- ☐ Application of chemical dust suppressants or chemical stabilizers according to the manufacturer's recommendations
- ☐ Covering with tarps or vegetative cover
- ☐ Installation of wind barriers of fifty (50) percent porosity around three (3) sides of a storage pile
- ☐ Installation of wind barriers across open areas
- ☐ Any other measure(s) as effective as the measures listed above (please describe)

_____
_____
_____

11. TRAFFIC CONTROL FOR ON-SITE UNPAVED ROADS, PARKING LOTS AND STAGING AREAS

The following control measure MUST be addressed:

- A maximum speed limit of fifteen (15) miles per hour (mph) or less

Additional control measures: (At least one selection required.)

- ☐ Water every two hours of active operation or sufficiently often to keep the area adequately wetted
- ☐ Apply chemical dust suppressants consistent with manufacturer's directions
- ☐ Maintain a gravel cover with a silt content that is less than five (5) percent and asbestos content that is less than 0.25 percent, as determined using an approved asbestos bulk test method, to a depth of three (3) inches on the surface being used for travel
- ☐ Any other measure(s) as effective as the measures listed above (please describe)

_____
_____
_____

12. EARTHMOVING ACTIVITIES

Controls for earthmoving activities will include: (At least one selection required.)

- ☐ Pre-wetting the ground to the depth of the anticipated cuts
- ☐ Suspending grading operations when wind speeds are high enough to result in dust emissions crossing the property line, despite the application of dust mitigation measures
- ☐ Application of water prior to any land clearing
- ☐ Any other measure(s) as effective as the measures listed above (please describe)

_____
_____
_____

13. OFF-SITE TRANSPORT

The owner/operator must ensure that no trucks are allowed to transport excavated material off-site unless:

- Trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments
- Loads are adequately wetted

And either: (At least one selection required.)

- ☐ Covered with tarps
- ☐ Loaded such that the material does not touch the front, back or sides of the cargo compartment at any point less than six inches from the top and that no point of the load extends above the top of the cargo compartment

14. POST CONSTRUCTION STABILIZATION OF DISTURBED AREAS

Upon completion of the project, disturbed surfaces shall be stabilized using one or more of the following: (At least one selection required.)

- ☐ Establish a vegetative cover (detail type of vegetative cover to be used)
  _____
  _____
- ☐ Placement of at least twelve (12) inches of non-asbestos-containing material*
- ☐ Paving
- ☐ Any other measure(s) deemed sufficient to prevent wind speeds of ten (10) miles per hour (mph) or greater from causing visible dust emissions (please describe)
  _____
  _____

* All cover materials must be < 0.25% asbestos as determined by ARB Method 435, and reported as required in Box 15.

15. AIR MONITORING FOR ASBESTOS

Check Box, obtain Authorized District Staff Signature if checking waver:

- ☐ Air monitoring will be performed pursuant to Appendix E, Placer County Air Pollution Control District Air Sampling Requirements for Naturally Occurring Asbestos (NOA). OR
- ☐ Air monitoring has been waived. District approval has been obtained.

Authorized District Staff Signature **Date**

_____

Comments/Alternate Air Monitoring Request _____
_____

16. REPORTING REQUIREMENTS

If air monitoring in Box 14. is required, reporting to the district for the following is required:

- The results of any air monitoring conducted at the request of the APCO, per the frequency specified in the Sampling Protocol in Appendix E

If soil cover is utilized per Box 13., cover soil must be sampled and results submitted:

- The laboratory results of any asbestos bulk sampling or testing prior to use of sampled materials as cover

17. DISPOSITION AND FINAL LOCATION OF ASBESTOS-CONTAINING MATERIALS

If any materials originating on site are to be shipped off site during or post construction:

- A signed Acknowledgement Form for Offsite Disposition for the receipt of potentially asbestos-containing or known asbestos-containing materials shall be obtained by the owner/operator (ADMP Requirements Appendix D, Section J) -- one for each site receiving NOA materials.
- The final location or disposition methodology of any spoils created shall be reported as indicated in ADMP Requirements Appendix D, Section I.

If any materials originating on site are to be used or stabilized on site upon completion of the project:

- The areas where asbestos was identified, removed, and placed shall be described (mapped or plotted for example).

If the amount of asbestos is < 0.25% as determined by ARB Method 435, then the owner/operator is relieved from these obligations.

Materials with asbestos content of 1% or greater may be considered Hazardous Waste by the State of California. Please contact the Department of Toxic Substances Control for further guidance on such materials. DTSC: (916) 324-1826

18. BLASTING

Is Blasting required?

- ☐ Yes
- ☐ No

If Blasting is required, describe plans including a projected timeline for blasting operations:

_____
_____
_____
_____

19. POSTING REQUIREMENTS

The owner/operator must ensure that the following Posting Requirements are met:

- Cal-OSHA regulations require hazard communication plans include signage and postings at job sites. The District requires compliance with Cal-OSHA regulations. Contact Cal-OSHA at (800) 963-9424 for information.
- Additionally, for projects where an ADMP is required, warning Signs shall be posted at the main entrance(s) to the project for the duration of soil disturbance activities and at locations visible to persons passing the site if the site is adjacent to publicly accessed areas. Signs shall be posted in lettering of sufficient size to be readily visible and legible. The following wording is recommended: “Warning. Soils in the area may contain naturally occurring asbestos. Asbestos is a known carcinogen. Report excessive fugitive dust to the contractor at (contractor phone number), or PCAPCD: (530) 745-2330.” The sign(s) shall also identify the project name or street address.

20. DISTRICT RULE 228, FUGITIVE DUST

The owner/operator must ensure that the following District Rule 228 measures are observed:

- A person shall not cause or allow fugitive dust generated by active operations, an open storage pile, or a disturbed surface area, such that the fugitive dust is of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke as dark or darker in shade as that designated as No. 2 on the Ringelmann Chart (or 40% opacity), as published by the United States Bureau of Mines; (District Rule 228 Section 302)
- A person shall not cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area (including disturbance as a result of the raising and/or keeping of animals or by vehicle use), such that the presence of such dust remains visible in the atmosphere beyond the boundary line of the emissions source. (Rule 228 Section 301)
- Any contractor engaged in any active operation subject to this rule shall maintain records of actions to stabilize surface areas sufficient to establish location, type and date of treatment. Records shall be maintained and be readily accessible for two (2) years after the date of each entry and shall be provided to the District upon request and shall be open for inspection during unscheduled audits during normal business hours. (Rule 228 Section 503.1)

21. COMMENTS

Additional Comments

_____
_____
_____
_____
_____
_____
_____
_____

22. RESPONSIBLE PERSON

By signing this form and under penalty of perjury, I certify that based on information and belief formed after reasonable inquiry, that the information provided is true and accurate, and that all Asbestos Dust Mitigation Plan requirements outlined in this document and Rule 228, Fugitive Dust, will be met.

Signature of Company's Responsible Person | Date

_____

Name and Title (Printed) | Phone Number

_____

Appendix D

Asbestos Dust Mitigation Plan Requirements

Asbestos Dust Mitigation Plans must specify dust mitigation practices to ensure that no equipment or operation emits dust that is visible crossing the property line, and must include one or more provisions addressing **each** of the following topics.

A. Track-out prevention and control measures which shall include:
   1) Removal of any visible track-out from a paved public road at any location where vehicles exit the work site; this shall be accomplished using wet sweeping or a HEPA filter equipped vacuum device at the end of the work day or at least one time per day; and
   2) Installation of one or more of the following track-out prevention measures:
      a. A gravel pad designed using good engineering practices to clean the tires of exiting vehicles;
      b. A tire shaker;
      c. A wheel wash system;
      d. Pavement extending for not less than fifty consecutive feet from the intersection with the paved public road; or
      e. Any other measure as effective as the measures listed above.

B. Keeping active storage piles adequately wetted or covered with tarps.

C. Control for disturbed surface areas and storage piles that will remain inactive for more than seven days, which shall include one or more of the following:
   1) Keeping the surface adequately wetted;
   2) Establishment and maintenance of surface crusting;
   3) Application of chemical dust suppressants or chemical stabilizers according to the manufacturers' recommendations;
   4) Covering with tarp(s) or vegetative cover;
   5) Installation of wind barriers of fifty percent porosity around three sides of a storage pile;
   6) Installation of wind barriers across open areas; or
   7) Any other measure as effective as the measures listed above.

D. Control for on-site traffic on unpaved roads, parking lots, and staging areas that shall include:
   1) A maximum vehicle speed limit of fifteen miles per hour or less; and
   2) One or more of the following:
      a. Watering every two hours of active operations or sufficiently often to keep the area adequately wetted;
      b. Applying chemical dust suppressants consistent with manufacturer's directions;
      c. Maintaining a gravel cover with a silt content that is less than five percent and asbestos content that is less than 0.25 percent, as determined using an approved asbestos bulk test method, (see Appendix E), to a depth of three inches on the surface being used for travel; or
      d. Any other measure as effective as the measures listed above.

E. Control for earthmoving activities which shall include one or more of the following:
   1) Pre-wetting the ground to the depth of anticipated cuts;
   2) Suspending grading operations when wind speeds are high enough to result in dust emissions crossing the property line, despite the application of dust mitigation measures;
   3) Application of water prior to any land clearing; or
   4) Any other measure as effective as the measures listed above.

F. Per California Code of Regulations, Title 17, Section 93105, Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations (ATCM), the owner/operator shall ensure that no trucks are allowed to transport excavated material off-site unless:
   1) Trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments; and
   2) Loads are adequately wetted and either:
      a. Covered with tarps; or

b. Loaded such that the material does not touch the front, back, or sides of the cargo compartment at any point less than six inches from the top and that no point of the load extends above the top of the cargo compartment.

G. Upon completion of the project, post-construction stabilization of disturbed surfaces shall be accomplished using one or more of the following methods:
1) Establishment of a vegetative cover;
2) Placement of at least twelve inches ("one foot" per District Rule 228, Fugitive Dust, Subsection 401.9.2) of non-asbestos-containing material;
3) Paving;
4) Any other measure deemed sufficient to prevent wind speeds of ten miles per hour or greater from causing visible dust emissions.

Note: All cover materials must be < 0.25% asbestos as determined by ARB Method 435, and reported as required in I, below.

H. If required by the district APCO, the plan must include an air-monitoring component conforming to the *Air Sampling Protocol* in Appendix D, and specifying the following;
1) Type and siting of air sampling device(s);
2) Sampling duration and frequency; and
3) Analytical method.

I. The plan shall state a frequency of reporting to the District for the items specified below, and for any other items identified in the plan. The owner/operator of any grading or construction operation subject to this section shall submit the following to the District:
1) The results of any air monitoring conducted at the request of the APCO, per the frequency specified in the Sampling Protocol in Appendix E; and
2) The laboratory results of any asbestos bulk sampling or testing prior to use of sampled materials as cover.

J. If any materials originating on site are to be shipped offsite during or post-construction, the plan must contain such details, and a signed Acknowledgement Form for Off-site Disposition (Appendix F), for the receipt of potentially or known asbestos-containing materials stating that prescribed dust control measures and stabilization will be followed, shall be obtained. One Acknowledgment Form is required for **each receiving site** and prior to shipment. Reporting of the final use or location of disposition of such materials is required:
1) The final location or disposition methodology of any spoils created during the project; and,
2) The areas where asbestos was identified, removed, and placed shall be described (mapped or plotted for example) upon completion of the project.

If the amount of asbestos is < 0.25% as determined by ARB Method 435, then the owner/operator is relieved from this obligation.

Materials with asbestos content of 1% or greater may be considered Hazardous Waste by the State of California. Please contact the Department of Toxic Substances Control for further guidance on such materials. DTSC: (916) 324-1826

K. If blasting is required, the plan shall identify any blasting plans including a projected time line for blasting related operations.

L. The owner/operator must ensure that the following District Rule 228, Fugitive Dust measures are observed:
1) A person shall not cause or allow fugitive dust generated by active operations, an open storage pile, or a disturbed surface area, such that the fugitive dust is of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke as dark or darker in shade as that designated as No. 2 on

the Ringelmann Chart (or 40% opacity), as published by the United States Bureau of Mines; (District Rule 228 Section 302)

2) A person shall not cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area (including disturbance as a result of the raising and/or keeping of animals or by vehicle use), such that the presence of such dust remains visible in the atmosphere beyond the boundary line of the emissions source. (Rule 228 Section 301)
3) Any contractor engaged in any active operation subject to this rule shall maintain records of actions to stabilize surface areas sufficient to establish location, type and date of treatment. Records shall be maintained and be readily accessible for two (2) years after the date of each entry and shall be provided to the District upon request and shall be open for inspection during unscheduled audits during normal business hours. (Rule 228 Section 503.1)

Appendix E

Air Sampling Requirements for Naturally Occurring Asbestos (NOA)

Air monitoring is required as a part of all Asbestos Dust Mitigation Plans (see Section 14 of the Application form, Appendix C) unless waived in writing by the District. District considerations as to whether air monitoring is required include the site location in relation to residents and members of the public. Extensive excavation in suspected or known naturally occurring asbestos (NOA) areas with close proximity to residential areas, high-traffic areas, or to a hospital or school is of particular concern. The purpose of the sampling is solely to assess and assure that the dust control measures proposed are effective. To meet the needs of the residents of Placer County and the District, the following air sampling protocol shall be required as a provision of the project and shall be followed on this project during excavation activities where NOA has been identified to be present or suspected of being present:

1. Air sampling shall be performed under the authority of a California Certified Asbestos Consultant (CAC) as defined by the State of California Division of Occupational Safety and Health, California Code of Regulations (CCR) Title 8 Section 1529, Asbestos in Construction Standard.

2. Area air samples shall be collected upwind and downwind of the work site near the immediate work area while NOA is being disturbed. At least one area air sample shall be collected at the fence line downwind of the actual work activity (soil or rock disturbance). At least one air sample shall be collected upwind of the work activity at or near the property line during soil or rock disturbance. Depending upon wind conditions, when the wind shifts during the day, the sample locations shall be re-evaluated and moved as necessary to measure downwind or upwind locations. When this is not possible, the changes in wind direction shall be noted in written daily logs documenting all air sampling data and activities of each day. Air samples shall be collected for full-work shift periods during disturbance of NOA.

3. All area air samples shall be analyzed by phase contrast microscopy (PCM) by NIOSH Method 7400 and by transmission electron microscopy (TEM) per the modified United States Environmental Protection Agency, Asbestos Hazard Emergency Response Act (AHERA) method for asbestos. The modified method of analysis by TEM shall count all asbestiform structures with an aspect ratio of 3:1 or greater, in lieu of the AHERA 5:1 aspect ratio, and at least 10 grid openings shall be evaluated on all air samples.

4. Personal air samples shall be collected to assess worker exposures in accordance with Cal/OSHA regulations CCR Title 8 Section 1529. In addition to analysis by PCM, all personal air samples shall be analyzed by TEM by the modified AHERA method, described previously for area air samples.

5. At least one personal and two area air samples shall be collected daily during excavation activities where NOA is being disturbed during the first week to determine the effectiveness of engineering controls. At least five continuous days of monitoring shall be conducted to determine the effectiveness of the engineering controls being employed. During the second and subsequent weeks of excavation or disturbance, at least two days of air sampling shall be conducted each week to assess engineering controls.

6. Air sampling may be required to be increased in frequency depending upon the effectiveness of dust control measures and the performance of the contractor or at the request of the District. Air sampling frequency may be reduced from the minimum specified only with the approval of the District.

7. Area air samples shall be collected onto either 0.45 micron or 0.8 micron mixed cellulose ester (MCE) filters housed in a 25-millimeter diameter cowled plastic housing at a maximum airflow rate of 10.0 liters per minute. This may require the use of generators for electricity if electrical power is not readily available. Personal air samples shall be collected onto 0.8 micron MCE filters using battery operated personal sampling pumps at flow rates not exceeding 2.5 liters per minute.

8. The airflow rates for both the high volume and personal sampling pumps shall be calibrated prior to, and at the conclusion of the sampling period using either a primary standard calibrator, or a field rotameter calibrated by a primary standard within the previous year. The airflow rate, time, activity, and person or location shall be recorded on a laboratory submittal sheet. The name of the person and company collecting the air sample, identification of the project, and address shall be clearly identified on the submittal sheet. The submittal sheet shall have a completed chain of custody documenting signature, time, and date.

9. The air samples shall be analyzed by a laboratory that is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for TEM analysis, and that maintains proficiency in the American Industrial Hygiene Proficiency Analytical Testing (PAT) Program for PCM analysis.

10. Results of all laboratory analysis shall be faxed to the Placer County APCD Air Pollution Control Officer (APCO), to District fax number (530) 745-2373, within 48 hours of collection of the samples during the first two weeks and within 72 hours of collection for subsequent weeks of monitoring.

11. The QA/QC samples will consist of at least one field blank filter each day that air samples are collected. The field blank sample shall be analyzed for fibers by PCM analysis but not required by TEM analysis in an effort to reduce costs to the owner. Air sampling shall be conducted in accordance with good industrial hygiene sampling protocols and will follow the methods established by both NIOSH and AHERA.

Note that asbestos as defined by the ATCM includes only the group of six commercially important silicate minerals of fibrous or asbestiform habit having properties of high tensile strength, flexibility, chemical resistance, and heat resistance. Such properties made these minerals useful in many manufactured products and industrial processes during the twentieth century. The six types of asbestos are chrysotile, crocidolite (asbestiform riebeckite), amosite (asbestiform cummingtonite, grunerite), asbestiform tremolite, asbestiform actinolite, and asbestiform anthophylite. However, many other minerals such as brucite, erionite, talc, tourmaline, palygorskite, sepiolite, and others can crystallize in the fibrous habit (asbestiform) under the right conditions.[5] In this context, "asbestiform" means the unusual crystallization habit of a mineral when the crystals are thin, hair-like fibers. Historically, the definition of asbestiform habit was based primarily on appearance, and the properties were only implied. At present, the definition of asbestiform habit is often augmented to include a statement on the properties of asbestiform fibers, i.e., shape; enhanced strength, flexibility, and durability; diameter-dependent strength; and unique surfaces. The fibers of asbestos are good examples of the asbestiform habit.[6]

The purpose of the District's sampling requirement is solely to assess the effectiveness of engineering controls. **Area sampling results are not intended for purposes of assessing health risk.** Positive findings of NOA in sampling results may have implications regarding occupational exposure.

[5] Zoltai, 1981; Skinner and Others, 1988, Special Publication 124, The Mineralogy of Asbestos, Page 9

[6] National Research Council, 1984, Special Publication 124, The Mineralogy of Asbestos, Page 20

Appendix F

Acknowledgement Form for Off-site Disposition

Per Asbestos Dust Mitigation Plan Requirements Box 16., Appendix C and Section J, Appendix D, If any materials originating on site are to be shipped offsite during or post-construction, the plan must contain such details, and a signed Acknowledgement Form For Offsite Disposition for the receipt of potentially or known asbestos-containing materials stating that prescribed dust control measures and stabilization will be followed, shall be obtained. Reporting of the final use or disposition of such materials shall be carried out as specified in Appendix C, Box 16., and Appendix D, subparagraph J.1 and J.2.

Where applicable, complete and submit the following Acknowledgement Form for Off-site Disposition -- one for each receiving site. The form may be submitted via fax: (530) 745-2373, mail: Placer County Air Pollution Control District, 3091 County Center Drive, Suite 240, Auburn, CA 95603, or e-mail: pcapcd@placer.ca.gov.

Placer County
AIR POLLUTION CONTROL DISTRICT

ACKNOWLEDGEMENT FORM FOR OFF-SITE DISPOSAL

FILL OUT ONCE PER DISPOSAL SITE

Acknowledgement for the receipt of potentially or known asbestos-containing materials, per the ASBESTOS DUST MITIGATION PLAN Requirements Section J. Page D-2, provides proof that the recipient has been advised that materials accepted may contain Naturally Occurring Asbestos and that these materials will be handled properly.

1. RECIPIENT INFORMATION			
Transporter/Driver Information		**Disposal Site Information**	
Name		Name	
Company		Company	
Address		Address	
City/State/Zip		City/State/Zip	
Phone	Fax	Phone	Fax

2. ACKNOWLEDGEMENT FOR RECEIPT OF ASBESTOS-CONTAINING MATERIALS

If any materials originating on site are to be shipped off site during or post construction:

- I, _____, hereby acknowledge that I have received materials that contain, or may contain, naturally occurring asbestos from the above owner/contractor at the above project location. All such materials will be handled in a manner adherent to the Asbestos Dust Mitigation Plan Guidance and all pertinent federal and state laws. Prescribed dust control measures will be followed.

Signature **Date**

_____

- Note: If the amount of asbestos is < 0.25% as determined by ARB Method 435, then the owner/operator is relieved from this obligation

ACKNOWLEDGEMENT FORM FOR OFF-SITE DISPOSAL

FILL OUT ONCE PER DISPOSAL SITE

3. CONTRACTOR AND OWNER INFORMATION			
Contractor Information		**Owner Information**	
Name		Name	
Address		Addres	
City/State/Zip		City/State/Zip	
Contact		Contact	
Phone	Fax	Phone	Fax
E-mail Address		E-mail Address	

4. PROJECT INFORMATION	Project Name
Location	
Address	
City/State/Zip	

The form may be submitted via fax: (530) 745-2373, mail: Placer County Air Pollution Control District, 3091 County Center Drive, Suite 240, Auburn, CA 95603, or e-mail: pcapcd@placer.ca.gov.