APPENDIX A

AIR QUALITY MODELING DATA

Big Tujunga Reservoir Sediment Removal 2013 - 052912

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1	User Defined Unit
User Defined Industrial	1	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**		**Utility Company**	Southern California Edison
Climate Zone	9		2.2		
		Precipitation Freq (Days)			
			33		

1.3 User Entered Comments

Project Characteristics - Not sure if utility is LADWP or Edison, LADWP is more conservative.

Land Use - Big Tujunga Reservoir area = 68 acres.
Maple Canyon SPS area = 22 acres.

Construction Phase - Site and road prep 4/1-12/2013 6d/wk 11 days
Dry season work 4/14-15-15--10/11-11-12/2013 6d/wk 25 wk 155 days
Storm season transport 10/14/2013-4/4/2014 5d/wk 25 wk 125 days

Off-road Equipment - Big T Res - 4 excavators, 4 loaders

Off-road Equipment - SPS-1 excavator, 1 dozer, 4 loaders

Off-road Equipment - OFFROAD 2011 load factors
Road and site prep-1dozer, 4 loader/backhoe, 1 grader

Off-road Equipment - Crusher site- 2 20 hp generators, 2 hrs/day

Off-road Equipment - 4 front loaders, 1 dozer, 1 excavator, per info provided.

Off-road Equipment - Storm season xport - 1 loader

Trips and VMT - Worker trips-default 4 site, SPS, BTR
Est 10 for crush, 5 for storm season

On-road Fugitive Dust -

Grading - On-road hauling not calculated with CalEEMod

Construction Off-road Equipment Mitigation - 3x water, but sediment is wet; negligible dust
Off-road engine mit - all Tier 3

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	8.43	59.24	45.71	0.08	12.28	3.69	15.97	3.35	3.69	7.03			0.00	0.77	0.00	7,532.74
2014	0.38	2.32	2.37	0.00	0.11	0.18	0.29	0.00	0.18	0.19			0.00	0.04	0.00	365.89
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	5.46	32.36	45.21	0.08	5.37	2.74	8.11	1.33	2.74	4.07			0.00	0.77	0.00	7,532.74
2014	0.28	1.51	2.29	0.00	0.11	0.15	0.26	0.00	0.15	0.15			0.00	0.04	0.00	365.89
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

3.2 Road and site preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.02	0.00	6.02	3.31	0.00	3.31						0.00
Off-Road	4.01	30.60	19.22	0.03		1.77	1.77		1.77	1.77				0.36		3,218.20
Total	**4.01**	**30.60**	**19.22**	**0.03**	**6.02**	**1.77**	**7.79**	**3.31**	**1.77**	**5.08**				**0.36**		**3,218.20**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.13	0.13	1.57	0.00	0.32	0.01	0.33	0.01	0.01	0.02				0.02		266.42
Total	**0.13**	**0.13**	**1.57**	**0.00**	**0.32**	**0.01**	**0.33**	**0.01**	**0.01**	**0.02**				**0.02**		**266.42**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.35	0.00	2.35	1.29	0.00	1.29						0.00
Off-Road	2.46	15.47	18.13	0.03		1.22	1.22		1.22	1.22				0.36		3,218.20
Total	**2.46**	**15.47**	**18.13**	**0.03**	**2.35**	**1.22**	**3.57**	**1.29**	**1.22**	**2.51**				**0.36**		**3,218.20**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.13	0.13	1.57	0.00	0.32	0.01	0.33	0.01	0.01	0.02				0.02		266.42
Total	**0.13**	**0.13**	**1.57**	**0.00**	**0.32**	**0.01**	**0.33**	**0.01**	**0.01**	**0.02**				**0.02**		**266.42**

3.3 Maple SPS - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.67	0.00	8.67	3.31	0.00	3.31						0.00
Off-Road	3.87	29.35	18.83	0.03		1.71	1.71		1.71	1.71				0.35		3,150.25
Total	**3.87**	**29.35**	**18.83**	**0.03**	**8.67**	**1.71**	**10.38**	**3.31**	**1.71**	**5.02**				**0.35**		**3,150.25**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.13	0.13	1.57	0.00	0.32	0.01	0.33	0.01	0.01	0.02				0.02		266.42
Total	**0.13**	**0.13**	**1.57**	**0.00**	**0.32**	**0.01**	**0.33**	**0.01**	**0.01**	**0.02**				**0.02**		**266.42**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.38	0.00	3.38	1.29	0.00	1.29						0.00
Off-Road	2.41	15.16	17.69	0.03		1.20	1.20		1.20	1.20				0.35		3,150.25
Total	**2.41**	**15.16**	**17.69**	**0.03**	**3.38**	**1.20**	**4.58**	**1.29**	**1.20**	**2.49**				**0.35**		**3,150.25**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.13	0.13	1.57	0.00	0.32	0.01	0.33	0.01	0.01	0.02				0.02		266.42
Total	**0.13**	**0.13**	**1.57**	**0.00**	**0.32**	**0.01**	**0.33**	**0.01**	**0.01**	**0.02**				**0.02**		**266.42**

3.4 Big Tujunga Reservoir - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.65	0.00	2.65	0.00	0.00	0.00						0.00
Off-Road	4.06	28.83	21.78	0.04		1.91	1.91		1.91	1.91				0.36		3,508.90
Total	**4.06**	**28.83**	**21.78**	**0.04**	**2.65**	**1.91**	**4.56**	**0.00**	**1.91**	**1.91**				**0.36**		**3,508.90**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.17	0.18	2.10	0.00	0.43	0.01	0.44	0.02	0.01	0.03				0.02		355.23
Total	**0.17**	**0.18**	**2.10**	**0.00**	**0.43**	**0.01**	**0.44**	**0.02**	**0.01**	**0.03**				**0.02**		**355.23**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.03	0.00	1.03	0.00	0.00	0.00						0.00
Off-Road	2.66	16.80	22.80	0.04		1.51	1.51		1.51	1.51				0.36		3,508.90
Total	**2.66**	**16.80**	**22.80**	**0.04**	**1.03**	**1.51**	**2.54**	**0.00**	**1.51**	**1.51**				**0.36**		**3,508.90**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.17	0.18	2.10	0.00	0.43	0.01	0.44	0.02	0.01	0.03				0.02		355.23
Total	**0.17**	**0.18**	**2.10**	**0.00**	**0.43**	**0.01**	**0.44**	**0.02**	**0.01**	**0.03**				**0.02**		**355.23**

3.5 Seasonal stockpile, crush, transport - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.11	0.67	0.38	0.00		0.04	0.04		0.04	0.04				0.01		74.31
Total	**0.11**	**0.67**	**0.38**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**				**0.01**		**74.31**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.09	0.09	1.05	0.00	0.21	0.01	0.22	0.01	0.01	0.02				0.01		177.62
Total	**0.09**	**0.09**	**1.05**	**0.00**	**0.21**	**0.01**	**0.22**	**0.01**	**0.01**	**0.02**				**0.01**		**177.62**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00				0.01		74.31
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**				**0.01**		**74.31**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.09	0.09	1.05	0.00	0.21	0.01	0.22	0.01	0.01	0.02				0.01		177.62
Total	**0.09**	**0.09**	**1.05**	**0.00**	**0.21**	**0.01**	**0.22**	**0.01**	**0.01**	**0.02**				**0.01**		**177.62**

3.6 Storm season transport to Sunland - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.37	2.45	1.90	0.00		0.21	0.21		0.21	0.21				0.03		278.58
Total	**0.37**	**2.45**	**1.90**	**0.00**		**0.21**	**0.21**		**0.21**	**0.21**				**0.03**		**278.58**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.04	0.04	0.52	0.00	0.11	0.00	0.11	0.00	0.00	0.01				0.01		88.81
Total	**0.04**	**0.04**	**0.52**	**0.00**	**0.11**	**0.00**	**0.11**	**0.00**	**0.00**	**0.01**				**0.01**		**88.81**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.24	1.47	1.81	0.00		0.15	0.15		0.15	0.15				0.03		278.58
Total	**0.24**	**1.47**	**1.81**	**0.00**		**0.15**	**0.15**		**0.15**	**0.15**				**0.03**		**278.58**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.04	0.04	0.52	0.00	0.11	0.00	0.11	0.00	0.00	0.01				0.01		88.81
Total	**0.04**	**0.04**	**0.52**	**0.00**	**0.11**	**0.00**	**0.11**	**0.00**	**0.00**	**0.01**				**0.01**		**88.81**

3.6 Storm season transport to Sunland - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.34	2.28	1.88	0.00		0.18	0.18		0.18	0.18				0.03		278.52
Total	**0.34**	**2.28**	**1.88**	**0.00**		**0.18**	**0.18**		**0.18**	**0.18**				**0.03**		**278.52**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.04	0.04	0.48	0.00	0.11	0.00	0.11	0.00	0.00	0.01				0.00		87.37
Total	**0.04**	**0.04**	**0.48**	**0.00**	**0.11**	**0.00**	**0.11**	**0.00**	**0.00**	**0.01**				**0.00**		**87.37**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.24	1.47	1.81	0.00		0.15	0.15		0.15	0.15				0.03		278.52
Total	**0.24**	**1.47**	**1.81**	**0.00**		**0.15**	**0.15**		**0.15**	**0.15**				**0.03**		**278.52**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00		0.00
Worker	0.04	0.04	0.48	0.00	0.11	0.00	0.11	0.00	0.00	0.01				0.00		87.37
Total	**0.04**	**0.04**	**0.48**	**0.00**	**0.11**	**0.00**	**0.11**	**0.00**	**0.00**	**0.01**				**0.00**		**87.37**

Big Tujunga Reservoir Sediment Removal												
	On-road NOx emissions											
					Nox			Nox			Nox	
					Base/all model year - No mit			**2007 model year**			**2010 model year**	
	res-SPS											
	400	RT daily			running			running			running	
	800	1-way			Running emission factor from EMFAC 2011 summer 2013 all model year 20 mph			Running emission factor from EMFAC 2011 summer 2013 - 2007model year 20 mph			Running emission factor from EMFAC 2011 summer 2013 - 2010 model year 20 mph	
	2.2	miles res to SPS			11.43255	gr/VMT		9.930938	gr/VMT		2.872786	gr/VMT
	2.8	miles SPS to res			50.4	#/day		43.7	#/day		12.7	#/day
	5	miles/RT										
	2000	VMT/day			idle			idle			idle	
	3	min idle at res			idle emission factor from EMFAC 2011 summer 2013			idle emission factor from EMFAC 2011 summer 2013			idle emission factor from EMFAC 2011 summer **2023**	
	3	min idle at SPS			78.926	gr/hr		78.926	gr/hr		40.99567	gr/hr
	6	min idle/RT			7.0	#/day		7.0	#/day		3.6	#/day
	2400	min idle/day										
	40.0	hrs idle/day			total res-SPS			total res-SPS			total res-SPS	
					57.3	**#/day**		**50.7**	**#/day**		**16.3**	**#/day**
	crusher-stockpile											
	28	RT daily			Base - No mit			Base - No mit			Base - No mit	
	56	1-way										
	1.0	miles crsh to pile			running			running			running	
	1.3	miles pile to crush			11.43255	gr/VMT		9.930938	gr/VMT		2.872786	gr/VMT
	2.3	miles/RT			1.6	#/day		1.4	#/day		0.4	#/day
	64.4	VMT/day										
					idle			idle			idle	
	3	min idle at crush			78.926	gr/hr		78.926	gr/hr		40.99567	gr/hr
	3	min idle at Stock			0.5	#/day		0.5	#/day		0.3	#/day
	6	min idle/RT										
	168	min idle/day			total crusher-stockpile			total crusher-stockpile			total crusher-stockpile	
	2.8	**hrs idle/day**			**2.1**	**#/day**		**1.9**	**#/day**		**0.7**	**#/day**
					Total daily on-road			Total daily on-road			Total daily on-road	
					59.4	**#/day**		**52.6**	**#/day**		**16.9**	**#/day**

Big Tujunga Reservoir Sediment Removal																	
	Fugitive PM10 from Hauling - Existing Roads																
			Paved road								**Unpaved road**						
			EF=k(sl)^0.91(W)^1.02								EF=k(s/12)^ a(W/3)^b						
			Formula for emission factor (EF)								Formula for emission factor (EF)						
			from USEPA AP-42 13.2.1 Paved Roads								from USEPA AP-42, 13.2.2.2 Unpaved Roads, for industrial roads						
				k = particle size multiplier for particle size and units								k, a, and b are empirical constants					
				sL=road surface silt loading (g/m^2) - CalEEMod default								s=road surface material silt content (%)					
				W=average vehicle weight (tons)								W= mean vehicle weight (tons)					
				For PM10 and lb/VMT, k=0.0022 from AP-42 Table 13.2.1-1								For PM10, k=1.5, a=0.9, b=0.45 - from AP-42, Table 13.2.2-2					
	Haul truck weight assumed to be			30	tons												
	Reservoir to-from SPS						**Emission Factors**										
	400	trips daily	EF	k-PM10 #	sL	w					EF	k	s	W			
	2.2	miles res to SPS	0.008691	0.0022	0.1	30					3.132397	1.5	8.6	30			
	1.7	paved															
	0.5	unpaved		Haul truck weight assumed to be			30	tons									
	680	VMT/day/paved															
	200	VMT/day/unpaved					**Unmitigated Emissions**										
				Paved road				Unpaved road				Total					
				Emissions = EF*VMT													
				5.9	#/day			626.5	#/day			632.4	#/day				
	Reservoir from SPS						**Emission Factors**										
	400	trips daily	EF	k-PM10 #	sL	w					EF	k	s	W			
	2.8	miles SPS to res	0.003413	0.0022	0.1	12					2.073976	1.5	8.6	12			
	1.3	paved															
	1.5	unpaved		Haul truck weight assumed to be			12	tons									
	520	VMT/day/paved															
	600	VMT/day/unpaved					**Unmitigated Emissions**										
				Paved road				Unpaved road				Total					
				Emissions = EF*VMT													
				1.8	#/day			1244.4	#/day			1246.2	#/day				
	Crusher to-from Stockpile																
	28	RT daily															
	1.0	miles crsh to pile															
	0.7	paved															
	0.3	unpaved															
	1.3	miles pile to crush															
	0.7	paved															
	0.6	unpaved															
	1.4	total paved					**Unmitigated Emissions**										
	0.9	total unpaved		Paved road				Unpaved road				Total					
	39.2	VMT/day/paved		0.3	#/day			78.9	#/day			79.3	#/day				
	25.2	VMT/day/unpaved															
	Total Emissions																
		Unmitigated		**8.0**	**#/day**			**1949.8**	**#/day**			**1957.8**	**#/day**				
		Mitigation															
		Watering	55	percent reduction				1072.4	reduction								
		Mitigated		**8.0**	**#/day**			**877.4**	**#/day**			**885.4**	**#/day**				
	Conveyor Belt Option																
				0.3				78.9									
		Watering	55	percent reduction				43.4	reduction								
				0.3	**#/day**			**35.5**	**#/day**			**35.9**	**#/day**				

Big Tujunga Reservoir Sediment Removal															
	On-road Hauling EMFAC emissions - default fleet														
		EMFAC 2011													
On-road		2013 Estimated Seasonal Emission Rates													
		EMFAC 2007 Vehicle Categories													
		Summer Season													
		Los Angeles COUNTY													
		South Coast AIR BASIN													
		Area	CalYr	Season	Veh	Fuel	MdlYr	Speed	**ROG_RUN**	**CO_RUNEX**	**NOX_RUN**	**PM10_RU**	**PM2_5_RU**	**CO2_RUNEX**	
res-SPS								(Miles/hr)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	
400	RT daily	Los Angele	2013	Summer	T7	DSL	AllMYr	20	0.698244	2.892971	11.43255	0.319732	0.294153	2155.8552	
5	miles/RT														
2000	**VMT/day**						**emissions**	**pounds/day**	**3.1**	**12.7**	**50.4**	**1.4**	**1.3**	9497.2	
3	min idle at res														
3	min idle at SPS														
6	min idle/RT								6.749567	27.51088	78.92598	0.450009	0.414009	7416.7447	
2400	min idle/day														
40.0	**hrs idle/day**						**emissions**	**pounds/day**	**0.6**	**2.4**	**7.0**	**0.04**	**0.04**	653.46	
														10151	#/day
crusher-stockpile														156	days
28	RT daily													**718**	**MT/year**
2.3	miles/RT														
64.4	**VMT/day**						**emissions**	**pounds/day**	**0.1**	**0.4**	**1.6**	**0.05**	**0.04**	305.81	
3	min idle at crush														
3	min idle at Stock														
6	min idle/RT														
168	min idle/day														
2.8	**hrs idle/day**						**emissions**	**pounds/day**	**0.0**	**0.2**	**0.5**	**0.00**	**0.00**	45.74	
								TOTAL	**3.8**	**15.7**	**59.4**	**1.5**	**1.4**	10502.2	
														351.6	#/day
														156	days
														25	**MT/year**
					conveyor belt total				**0.1**	**0.6**	**2.1**	**0.0**	**0.0**		

Big Tujunga Reservoir Sediment Removal												
	Aggregate Processing and Storage Piles											
Aggregate Processing - Crushing and Screening												
	Emissions											
	E = EF x TP											
		E = emissions, pounds/day										
		EF= emission factor for each process - pounds/ton										
		TP = throughput - tons/day										
	Emission factors from USEPA AP-42 - 11.9.2 Crushed Stone Processing and Pulverized Mineral Processing											
		Table 11.19.2-2 for PM10										
		Tertiary crushing-controlled			0.00054	lb/ton	0.0024	unc	Per AP-42 Factors not available for PM2.5			
		Screening-controlled			0.00074	lb/ton	0.0087		conservatively use PM10 factors			
	TP											
		CY/day	224	per DPW								
		tons/CY	1.35									
		tons/day	302.4									
	Emissions					uncontrolled						
		crushing	0.16	lb/day		0.73						
		screening	0.22	lb/day		2.63						
		Total	**0.39**			**3.36**						
Storage Piles												
	E=EF x A x (1-C)											
		E = emissions, pounds/day										
		EF= emission factor - pounds/acre/day										
		A = area of storage pile - acres										
		C = control factor - percent/100										
	Emission factors from USEPA AP-42											
		Inactive piles		1.7	lb/acre/day				Per AP-42 Factors not available for PM2.5			
		Active piles		6.3	lb/acre/day				conservatively use PM10 factors			
	Areas - assumed for this calculation											
		Inactive piles		2	acres							
		Active piles		0.25	acres							
	Control factor with watering or chemical suppression - suggested by SMAQMD											
		Inactive piles		0.8		0.5						
		Active piles		0.8		0.5						
	Emissions											
		Inactive piles		0.68	lb/day	1.7						
		Active piles		0.32	lb/day	0.79						
				1.00		**2.49**						

Big Tujunga Reservoir Sediment Removal										
	Truck Loading - Batch Drop - PM10									
Emissions										
E = EF x TP										
	E = emissions, pounds/day									
	EF=k x (0.0032) x ((U/5)^1.3)/((M/2)^1.4)				pounds/ton		From CalEEMod Appx A (and USEPA AP-42)			
		k = particle size constant								
		U = Wind speed- miles per hour								
		M = Moisture content - percent								
			k for PM10	0.35						
			U=	2.2	m/s	per CalEEMod for climate zone				
			convert to	4.9214	mph					
			M=	16	%	per DPW				
	TP = throughput - tons									
		for CY=	10000	cy/day		per Project plan				
			1.264	tons/CY		per CalEEMod				
		TP=	12642	tons/day						
	EF	5.9696E-05	pounds PM10/ton TP							
	TP	12642	tons TP/day							
	E	0.75	pounds PM10/day		per batch operation (truck load or unload)					
	Project will have		2	batch drops per trip; therefore						
	Batch drop emissions =			**1.51**	pounds per day					

Big Tujunga Reservoir Sediment Removal										
	Truck Loading - Batch Drop - PM2.5									
Emissions										
E = EF x TP										
	E = emissions, pounds/day									
	EF=k x (0.0032) x ((U/5)^1.3)/((M/2)^1.4)				pounds/ton		From CalEEMod Appx A (from USEPA AP-42)			
		k = particle size constant								
		U = Wind speed- miles per hour								
		M = Moisture content - percent								
			k for PM2.5	0.053						
			U=	2.2	m/s	per CalEEMod for climate zone				
			convert to	4.9214	mph					
			M=	16	%	per DPW				
	TP = throughput - tons									
		for CY=	10000	cy/day		per Project plan				
			1.264	tons/CY		per CalEEMod				
		TP=	12642	tons/day						
	EF	9.0397E-06	pounds/ton	PM2.5						
	TP	12642	tons/day							
	E	0.11	pounds/day	per batch operation (truck load or unload)						
	Project will have		2	batch drops per trip; therefore						
	Batch drop emissions =			**0.23**	pounds per day					

Big Tujunga Reservoir Sediment Removal																	
	Fugitive PM10 from Hauling - Paved Roads - water 3x daily																
			Paved road							**Unpaved road**							
			EF=k(sl)^0.91(W)^1.02							EF=k(s/12)^ a(W/3)^b							
			Formula for emission factor (EF)							Formula for emission factor (EF)							
			from USEPA AP-42 13.2.1 Paved Roads							from USEPA AP-42, 13.2.2.2 Unpaved Roads, for industrial roads							
				k = particle size multiplier for particle size and units							k, a, and b are empirical constants						
				sL=road surface silt loading (g/m^2) - CalEEMod default							s=road surface material silt content (%)						
				W=average vehicle weight (tons)							W= mean vehicle weight (tons)						
				For PM10 and lb/VMT, k=0.0022 from AP-42 Table 13.2.1-1							For PM10, k=1.5, a=0.9, b=0.45 - from AP-42, Table 13.2.2-2						
	Haul truck weight assumed to be			30	tons												
	Reservoir to-from SPS						**Emission Factors**										
	400	trips daily	EF	k-PM10 #	sL	w				EF	k	s	W				
	2.2	miles res to SPS	0.008691	0.0022	0.1	30				3.132397	1.5	8.6	30				
	2.035	paved															
	0.165	unpaved		Haul truck weight assumed to be			30	tons									
	814	VMT/day/paved															
	66	VMT/day/unpaved					**Unmitigated Emissions**										
				Paved road				Unpaved road			Total						
				Emissions = EF*VMT													
				7.1	#/day			206.7	#/day		213.8	#/day					
	Reservoir from SPS						**Emission Factors**										
	400	trips daily	EF	k-PM10 #	sL	w				EF	k	s	W				
	2.8	miles SPS to res	0.003413	0.0022	0.1	12				2.073976	1.5	8.6	12				
	2.635	paved															
	0.165	unpaved		Haul truck weight assumed to be			12	tons									
	1054	VMT/day/paved															
	66	VMT/day/unpaved					**Unmitigated Emissions**										
				Paved road				Unpaved road			Total						
				Emissions = EF*VMT													
				3.6	#/day			136.9	#/day		140.5	#/day					
	Crusher to-from Stockpile																
	28	RT daily															
	1.0	miles crsh to pile															
	1	paved															
	0	unpaved															
	1.3	miles pile to crush															
	0.97	paved															
	0.33	unpaved															
	1.97	total paved					**Unmitigated Emissions**										
	0.33	total unpaved		Paved road				Unpaved road			Total						
	55.16	VMT/day/paved		0.5	#/day			28.9	#/day		29.4	#/day					
	9.24	VMT/day/unpaved															
	Total Emissions																
		Unmitigated		**11.2**	**#/day**			**372.6**	**#/day**		**383.7**	**#/day**					
		Mitigation															
		Watering	61	percent reduction				227.3	reduction								
		Mitigated		**11.2**	**#/day**			**145.3**	**#/day**		**156.5**	**#/day**					

Big Tujunga Reservoir Sediment Removal																	
	Fugitive PM2.5 from Hauling - Paved Roads - water 3x daily																
			Paved road							**Unpaved road**							
			EF=k(sl)^0.91(W)^1.02							EF=k(s/12)^ a(W/3)^b							
			Formula for emission factor (EF)							Formula for emission factor (EF)							
			from USEPA AP-42 13.2.1 Paved Roads							from USEPA AP-42, 13.2.2.2 Unpaved Roads, for industrial roads							
				k = particle size multiplier for particle size and units							k, a, and b are empirical constants						
				sL=road surface silt loading (g/m^2) - CalEEMod default							s=road surface material silt content (%)						
				W=average vehicle weight (tons)							W= mean vehicle weight (tons)						
				For PM2.5 and lb/VMT, k=0.00054 from AP-42 Table 13.2.1-1							For PM2.5, k=.15, a=0.9, b=0.45 - from AP-42, Table 13.2.2-2						
	Haul truck weight assumed to be			30	tons												
	Reservoir to-from SPS						**Emission Factors**										
	400	trips daily	EF	k-PM10 #	sL	w				EF	k	s	W				
	2.2	miles res to SPS	0.002133	0.00054	0.1	30				0.31324	0.15	8.6	30				
	2.035	paved															
	0.165	unpaved		Haul truck weight assumed to be			30	tons									
	814	VMT/day/paved															
	66	VMT/day/unpaved					**Unmitigated Emissions**										
				Paved road				Unpaved road			Total						
				Emissions = EF*VMT													
				1.7	#/day			20.7	#/day		22.4	#/day					
	Reservoir from SPS						**Emission Factors**										
	400	trips daily	EF	k-PM10 #	sL	w				EF	k	s	W				
	2.8	miles SPS to res	0.000838	0.00054	0.1	12				0.207398	0.15	8.6	12				
	2.635	paved															
	0.165	unpaved		Haul truck weight assumed to be			12	tons									
	1054	VMT/day/paved															
	66	VMT/day/unpaved					**Unmitigated Emissions**										
				Paved road				Unpaved road			Total						
				Emissions = EF*VMT													
				0.9	#/day			13.7	#/day		14.6	#/day					
	Crusher to-from Stockpile																
	28	RT daily															
	1.0	miles crsh to pile															
	1	paved															
	0	unpaved															
	1.3	miles pile to crush															
	0.97	paved															
	0.33	unpaved															
	1.97	total paved					**Unmitigated Emissions**										
	0.33	total unpaved		Paved road				Unpaved road			Total						
	55.16	VMT/day/paved		0.1	#/day			2.9	#/day		3.0	#/day					
	9.24	VMT/day/unpaved															
	Total Emissions																
		Unmitigated		**2.7**	**#/day**			**37.3**	**#/day**		**40.0**	**#/day**					
		Mitigation															
		Watering	61	percent reduction				22.7	reduction								
		Mitigated		**2.7**	**#/day**			**14.5**	**#/day**		**17.3**	**#/day**					

Big Tujunga Reservoir Sediment Removal																	
	Fugitive PM10 from Hauling - Paved Roads - water to 75% reduction																
			Paved road							**Unpaved road**							
			EF=k(sl)^0.91(W)^1.02							EF=k(s/12)^ a(W/3)^b							
			Formula for emission factor (EF)							Formula for emission factor (EF)							
			from USEPA AP-42 13.2.1 Paved Roads							from USEPA AP-42, 13.2.2.2 Unpaved Roads, for industrial roads							
				k = particle size multiplier for particle size and units							k, a, and b are empirical constants						
				sL=road surface silt loading (g/m^2) - CalEEMod default							s=road surface material silt content (%)						
				W=average vehicle weight (tons)							W= mean vehicle weight (tons)						
				For PM10 and lb/VMT, k=0.0022 from AP-42 Table 13.2.1-1							For PM10, k=1.5, a=0.9, b=0.45 - from AP-42, Table 13.2.2-2						
	Haul truck weight assumed to be			30	tons												
	Reservoir to-from SPS						**Emission Factors**										
	400	trips daily	EF	k-PM10 #	sL	w				EF	k	s	W				
	2.2	miles res to SPS	0.008691	0.0022	0.1	30				3.132397	1.5	8.6	30				
	2.035	paved															
	0.165	unpaved		Haul truck weight assumed to be			30	tons									
	814	VMT/day/paved															
	66	VMT/day/unpaved					**Unmitigated Emissions**										
				Paved road				Unpaved road			Total						
				Emissions = EF*VMT													
				7.1	#/day			206.7	#/day		213.8	#/day					
	Reservoir from SPS						**Emission Factors**										
	400	trips daily	EF	k-PM10 #	sL	w				EF	k	s	W				
	2.8	miles SPS to res	0.003413	0.0022	0.1	12				2.073976	1.5	8.6	12				
	2.635	paved															
	0.165	unpaved		Haul truck weight assumed to be			12	tons									
	1054	VMT/day/paved															
	66	VMT/day/unpaved					**Unmitigated Emissions**										
				Paved road				Unpaved road			Total						
				Emissions = EF*VMT													
				3.6	#/day			136.9	#/day		140.5	#/day					
	Crusher to-from Stockpile																
	28	RT daily															
	1.0	miles crsh to pile															
	1	paved															
	0	unpaved															
	1.3	miles pile to crush															
	0.97	paved															
	0.33	unpaved															
	1.97	total paved					**Unmitigated Emissions**										
	0.33	total unpaved		Paved road				Unpaved road			Total						
	55.16	VMT/day/paved		0.5	#/day			28.9	#/day		29.4	#/day					
	9.24	VMT/day/unpaved															
	Total Emissions																
		Unmitigated		**11.2**	**#/day**			**372.6**	**#/day**		**383.7**	**#/day**					
		Mitigation															
		Watering	75	percent reduction				279.4	reduction								
		Mitigated		**11.2**	**#/day**			**93.1**	**#/day**		**104.3**	**#/day**					

Big Tujunga Reservoir Sediment Removal																	
	Fugitive PM2.5 from Hauling - Paved Roads - water to 75% reduction																
			Paved road							**Unpaved road**							
			EF=k(sl)^0.91(W)^1.02							EF=k(s/12)^ a(W/3)^b							
			Formula for emission factor (EF)							Formula for emission factor (EF)							
			from USEPA AP-42 13.2.1 Paved Roads							from USEPA AP-42, 13.2.2.2 Unpaved Roads, for industrial roads							
				k = particle size multiplier for particle size and units							k, a, and b are empirical constants						
				sL=road surface silt loading (g/m^2) - CalEEMod default							s=road surface material silt content (%)						
				W=average vehicle weight (tons)							W= mean vehicle weight (tons)						
				For PM2.5 and lb/VMT, k=0.00054 from AP-42 Table 13.2.1-1							For PM2.5, k=.15, a=0.9, b=0.45 - from AP-42, Table 13.2.2-2						
	Haul truck weight assumed to be			30	tons												
	Reservoir to-from SPS						**Emission Factors**										
	400	trips daily	EF	k-PM10 #	sL	w				EF	k	s	W				
	2.2	miles res to SPS	0.002133	0.00054	0.1	30				0.31324	0.15	8.6	30				
	2.035	paved															
	0.165	unpaved		Haul truck weight assumed to be			30	tons									
	814	VMT/day/paved															
	66	VMT/day/unpaved					**Unmitigated Emissions**										
				Paved road				Unpaved road			Total						
				Emissions = EF*VMT													
				1.7	#/day			20.7	#/day		22.4	#/day					
	Reservoir from SPS						**Emission Factors**										
	400	trips daily	EF	k-PM10 #	sL	w				EF	k	s	W				
	2.8	miles SPS to res	0.000838	0.00054	0.1	12				0.207398	0.15	8.6	12				
	2.635	paved															
	0.165	unpaved		Haul truck weight assumed to be			12	tons									
	1054	VMT/day/paved															
	66	VMT/day/unpaved					**Unmitigated Emissions**										
				Paved road				Unpaved road			Total						
				Emissions = EF*VMT													
				0.9	#/day			13.7	#/day		14.6	#/day					
	Crusher to-from Stockpile																
	28	RT daily															
	1.0	miles crsh to pile															
	1	paved															
	0	unpaved															
	1.3	miles pile to crush															
	0.97	paved															
	0.33	unpaved															
	1.97	total paved					**Unmitigated Emissions**										
	0.33	total unpaved		Paved road				Unpaved road			Total						
	55.16	VMT/day/paved		0.1	#/day			2.9	#/day		3.0	#/day					
	9.24	VMT/day/unpaved															
	Total Emissions																
		Unmitigated		**2.7**	**#/day**			**37.3**	**#/day**		**40.0**	**#/day**					
		Mitigation															
		Watering	75	percent reduction				27.9	reduction								
		Mitigated		**2.7**	**#/day**			**9.3**	**#/day**		**12.1**	**#/day**					

Big Tujunga Reservoir Sediment Removal											
	Fugitive Dust and CO2e from Conveyor Belt										
Fugitive dust											
E=EF x A x (1-C)											
	E = emissions, pounds/day										
	EF= emission factor - pounds/acre/day				conveyor	7920	feet	long			
	A = area of storage pile - acres					5	feet	wide			
	C = control factor - percent/100				area	39600	sq ft				
						0.91	acre				
Emission factors from USEPA AP-42											
	Inactive piles		1.7	lb/acre/day							
	Active piles		6.3	lb/acre/day							
Areas - assumed for this calculation											
	Inactive piles		0	acres							
	Active piles		0.91	acres							
Control factor with watering or chemical suppression - suggested by SMAQMD											
	Inactive piles		0.8								
	Active piles		0.5		50% control						
Emissions								Per AP-42 Factors not available for PM2.5			
	Inactive piles		0	lb/day				conservatively use PM10 factors			
	Active piles		2.86	lb/day							
			2.86								
Electricity	**2,768,334**	kwh/year									
	2,768	MWH/yr			**CO2e**						
			#/yr	GWF	MT/yr						
CO2	641.26	lb/MWH	1775222	1	805.1						
CH4	0.029		80.3	21	0.8						
N2O	0.011		30.5	310	4.3						
					810.1						

Big Tujunga Reservoir Sediment Removal															
	On-road Hauling EMFAC emissions - 2010 engines														
		EMFAC 2011													
On-road		2013 Estimated Seasonal Emission Rates													
		EMFAC 2007 Vehicle Categories													
		Summer Season													
		Los Angeles COUNTY													
		South Coast AIR BASIN													
		Area	CalYr	Season	Veh	Fuel	MdlYr	Speed	**ROG_RUNE**	**CO_RUNEX**	**NOX_RUNE**	**PM10_RUN**	**PM2_5_RU**	CO2_RUNEX	
res-SPS								(Miles/hr)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	
400	RT daily	Los Angeles	2013	Summer	T7	DSL	2010	20	0.309926	0.950677	2.872786	0.052675	0.048461	2121.911	
5	miles/RT														
2000	**VMT/day**						**running**	**emissions**	**1.4**	**4.2**	**12.7**	**0.2**	**0.2**	9347.6	
3	min idle at res														
3	min idle at SPS	**CY**	**Vehicle_Cl**	**Fuel_Type**	**Model_Yea**	**MY_Range**	**Season**								
6	min idle/RT	2013	T7	D	2010	2007-2040	s		6.969869	30.31873	39.64449	0.090838	0.083571	7453.273	
2400	min idle/day														
40.0	**hrs idle/day**						**idle**	**emissions**	**0.6**	**2.7**	**3.5**	**0.01**	**0.01**		
crusher-stockpile															
28	RT daily														
2.3	miles/RT														
64.4	**VMT/day**						**running**	**emissions**	**0.0**	**0.1**	**0.4**	**0.01**	**0.01**		
3	min idle at crush														
3	min idle at Stock														
6	min idle/RT														
168	min idle/day														
2.8	**hrs idle/day**						**idle**	**emissions**	**0.0**	**0.2**	**0.2**	**0.00**	**0.00**		
								TOTAL	**2.1**	**7.2**	**16.8**	**0.2**	**0.2**		

Big Tujunga Reservoir Sediment Removal 2013 - 052912

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1	User Defined Unit
User Defined Industrial	1	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**		**Utility Company**	Southern California Edison
Climate Zone	9		2.2		
		Precipitation Freq (Days)			
			33		

1.3 User Entered Comments

Project Characteristics -

~~Land Use - Big Tujunga Reservoir area = 83 acres.~~
~~Maple Canyon SPS area = 22 acres.~~

~~Construction Phase - Site and road prep 4/1-12/2013 6d/wk 11 days~~
~~Dry season work 4/13-15-16- 10/10-11-12/2013 6d/wk 25 wk 155 days~~
Storm season transport 10/14/2013-4/4/2014 5d/wk 25 wk 125 days
Trips and VMT - ~~Worker trips-default 4 site, SPS, BTR~~
Est ~~10 for crush,~~ 5 for storm season
On-road Fugitive Dust -

Grading - On-road hauling not calculated with CalEEMod

Off-road Equipment - Storm season xport - 1 loader

3.6 Storm season, BTR to Sunland - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.33	2.15	1.66	0.00		0.18	0.18		0.18	0.18				0.03		243.76
Total	**0.33**	**2.15**	**1.66**	**0.00**		**0.18**	**0.18**		**0.18**	**0.18**				**0.03**		**243.76**

3.6 Storm season, BTR to Sunland - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.30	2.00	1.65	0.00		0.16	0.16		0.16	0.16				0.03		243.71
Total	**0.30**	**2.00**	**1.65**	**0.00**		**0.16**	**0.16**		**0.16**	**0.16**				**0.03**		**243.71**

Big Tujunga Reservoir Sediment Removal 2013 - 052912

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1	User Defined Unit
User Defined Industrial	1	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	9	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Land Use - Big Tujunga Reservoir area = 68 acres.
Maple Canyon SPS area = 22 acres.

Construction Phase - Site and road prep 4/1-12/2013 6d/wk 11 days
Dry season work 4/14-15-15--10/11-11-12/2013 6d/wk 25 wk 155 days
Storm season transport 10/14/2013-4/4/2014 5d/wk 25 wk 125 days

Off-road Equipment - Big T Res - 4 excavators, 4 loaders

Off-road Equipment - SPS-1 excavator, 1 dozer, 4 loaders

Off-road Equipment - OFFROAD 2011 load factors
Road and site prep-1dozer, 4 loader/backhoe, 1 grader

Off-road Equipment - Crusher site- 2 20 hp generators, 2 hrs/day

Off-road Equipment - 4 front loaders, 1 dozer, 1 excavator, per info provided.

Off-road Equipment - Storm season xport - 1 loader

Trips and VMT - Worker trips-default 4 site, SPS, BTR
Est 10 for crush, 5 for storm season

On-road Fugitive Dust -

Grading - On-road hauling not calculated with CalEEMod

Construction Off-road Equipment Mitigation - 3x water, but sediment is wet; negligible dust
Off-road engine mit - all Tier 3

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.69	4.83	3.71	0.01	0.98	0.30	1.28	0.32	0.30	0.62			552.17	0.06	0.00	553.36
2014	0.01	0.08	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01			11.12	0.00	0.00	11.14
Total	**0.70**	**4.91**	**3.79**	**0.01**	**0.98**	**0.31**	**1.29**	**0.32**	**0.31**	**0.63**			**563.29**	**0.06**	**0.00**	**564.50**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.45	2.64	3.66	0.01	0.43	0.22	0.65	0.13	0.22	0.35			552.17	0.06	0.00	553.36
2014	0.01	0.05	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01			11.12	0.00	0.00	11.14
Total	**0.46**	**2.69**	**3.74**	**0.01**	**0.43**	**0.23**	**0.66**	**0.13**	**0.23**	**0.36**			**563.29**	**0.06**	**0.00**	**564.50**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

3.2 Road and site preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.03	0.00	0.03	0.02	0.00	0.02			0.00	0.00	0.00	0.00
Off-Road	0.02	0.17	0.11	0.00		0.01	0.01		0.01	0.01			16.02	0.00	0.00	16.05
Total	**0.02**	**0.17**	**0.11**	**0.00**	**0.03**	**0.01**	**0.04**	**0.02**	**0.01**	**0.03**			**16.02**	**0.00**	**0.00**	**16.05**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00			1.26	0.00	0.00	1.26
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**1.26**	**0.00**	**0.00**	**1.26**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.01	0.00	0.01	0.01	0.00	0.01			0.00	0.00	0.00	0.00
Off-Road	0.01	0.09	0.10	0.00		0.01	0.01		0.01	0.01			16.02	0.00	0.00	16.05
Total	**0.01**	**0.09**	**0.10**	**0.00**	**0.01**	**0.01**	**0.02**	**0.01**	**0.01**	**0.02**			**16.02**	**0.00**	**0.00**	**16.05**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00			1.26	0.00	0.00	1.26
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**1.26**	**0.00**	**0.00**	**1.26**

3.3 Maple SPS - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.67	0.00	0.67	0.28	0.00	0.28			0.00	0.00	0.00	0.00
Off-Road	0.30	2.27	1.46	0.00		0.13	0.13		0.13	0.13			220.91	0.02	0.00	221.42
Total	**0.30**	**2.27**	**1.46**	**0.00**	**0.67**	**0.13**	**0.80**	**0.28**	**0.13**	**0.41**			**220.91**	**0.02**	**0.00**	**221.42**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.12	0.00	0.02	0.00	0.02	0.00	0.00	0.00			17.74	0.00	0.00	17.76
Total	**0.01**	**0.01**	**0.12**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**			**17.74**	**0.00**	**0.00**	**17.76**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.26	0.00	0.26	0.11	0.00	0.11			0.00	0.00	0.00	0.00
Off-Road	0.19	1.17	1.37	0.00		0.09	0.09		0.09	0.09			220.91	0.02	0.00	221.42
Total	**0.19**	**1.17**	**1.37**	**0.00**	**0.26**	**0.09**	**0.35**	**0.11**	**0.09**	**0.20**			**220.91**	**0.02**	**0.00**	**221.42**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.12	0.00	0.02	0.00	0.02	0.00	0.00	0.00			17.74	0.00	0.00	17.76
Total	**0.01**	**0.01**	**0.12**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**			**17.74**	**0.00**	**0.00**	**17.76**

3.4 Big Tujunga Reservoir - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.21	0.00	0.21	0.02	0.00	0.02			0.00	0.00	0.00	0.00
Off-Road	0.31	2.23	1.69	0.00		0.15	0.15		0.15	0.15			246.09	0.03	0.00	246.63
Total	**0.31**	**2.23**	**1.69**	**0.00**	**0.21**	**0.15**	**0.36**	**0.02**	**0.15**	**0.17**			**246.09**	**0.03**	**0.00**	**246.63**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.16	0.00	0.03	0.00	0.03	0.00	0.00	0.00			23.65	0.00	0.00	23.68
Total	**0.01**	**0.01**	**0.16**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**			**23.65**	**0.00**	**0.00**	**23.68**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.08	0.00	0.08	0.01	0.00	0.01			0.00	0.00	0.00	0.00
Off-Road	0.21	1.30	1.77	0.00		0.12	0.12		0.12	0.12			246.09	0.03	0.00	246.63
Total	**0.21**	**1.30**	**1.77**	**0.00**	**0.08**	**0.12**	**0.20**	**0.01**	**0.12**	**0.13**			**246.09**	**0.03**	**0.00**	**246.63**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.16	0.00	0.03	0.00	0.03	0.00	0.00	0.00			23.65	0.00	0.00	23.68
Total	**0.01**	**0.01**	**0.16**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**			**23.65**	**0.00**	**0.00**	**23.68**

3.5 Seasonal stockpile, crush, transport - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.05	0.03	0.00		0.00	0.00		0.00	0.00			5.24	0.00	0.00	5.26
Total	**0.01**	**0.05**	**0.03**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**			**5.24**	**0.00**	**0.00**	**5.26**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.08	0.00	0.01	0.00	0.02	0.00	0.00	0.00			11.90	0.00	0.00	11.92
Total	**0.01**	**0.01**	**0.08**	**0.00**	**0.01**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**			**11.90**	**0.00**	**0.00**	**11.92**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00			5.24	0.00	0.00	5.26
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**			**5.24**	**0.00**	**0.00**	**5.26**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.08	0.00	0.01	0.00	0.02	0.00	0.00	0.00			11.90	0.00	0.00	11.92
Total	**0.01**	**0.01**	**0.08**	**0.00**	**0.01**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**			**11.90**	**0.00**	**0.00**	**11.92**

3.6 Storm season transport to Sunland - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.07	0.05	0.00		0.01	0.01		0.01	0.01			7.18	0.00	0.00	7.20
Total	**0.01**	**0.07**	**0.05**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**			**7.18**	**0.00**	**0.00**	**7.20**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00			2.17	0.00	0.00	2.18
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**2.17**	**0.00**	**0.00**	**2.18**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.04	0.05	0.00		0.00	0.00		0.00	0.00			7.18	0.00	0.00	7.20
Total	**0.01**	**0.04**	**0.05**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**			**7.18**	**0.00**	**0.00**	**7.20**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00			2.17	0.00	0.00	2.18
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**2.17**	**0.00**	**0.00**	**2.18**

3.6 Storm season transport to Sunland - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.08	0.06	0.00		0.01	0.01		0.01	0.01			8.57	0.00	0.00	8.59
Total	**0.01**	**0.08**	**0.06**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**			**8.57**	**0.00**	**0.00**	**8.59**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00			2.55	0.00	0.00	2.56
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**2.55**	**0.00**	**0.00**	**2.56**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.05	0.06	0.00		0.00	0.00		0.00	0.00			8.57	0.00	0.00	8.59
Total	**0.01**	**0.05**	**0.06**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**			**8.57**	**0.00**	**0.00**	**8.59**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00			2.55	0.00	0.00	2.56
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**2.55**	**0.00**	**0.00**	**2.56**