



**County of San Diego, Planning & Development Services**  
**Project Planning Division**

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**Memorandum**

**TO:** Jim Bennett, Project Manager  
**FROM:** Poonam Boparai, Air Quality and Climate Change Specialist  
**SUBJECT:** Air Quality and Greenhouse Gas Analysis for the Inland Valley Materials Reclamation Plan Modification; Project Number PDS2012-331-78-003-03  
**DATE:** October 10, 2013

This memorandum summarizes the air and greenhouse gas (GHG) emissions calculations for the Inland Valley Materials Reclamation Plan Modification project (project). The purpose of this project is to modify the reclamation plan boundary and final slope configuration for Inland Valley Materials (RP 78-003). The proposed reclamation modification will increase the mining depth of the original plan from 495 feet Above Mean Sea Level (AMSL) to 372 feet MSL. The proposed changes to RP 78-003 will call for backfill of the mine from the new planned mining depth of 372 AMSL back to 458 feet AMSL.

Emissions calculations for the modified Reclamation Plan were performed using the California Air Resources Board-approved emissions model Urbemis2007, Version 9.2.4. Project-generated emissions were modeled based on information provided in the project description and by the applicant regarding reclamation operations. The emissions were compared with PDS's daily screening level thresholds (SLTs) to determine if the project would have a significant impact on air quality.<sup>1</sup>

Project Description

The existing Reclamation Plan (RP 78-003) covers an area of approximately 13.74 acres. Operations at the site have extended past the original planned mining depth of 495 feet MSL. The applicant is seeking a modification to the existing Reclamation Plan. The purpose of the modification is to account for the extended mining depth and establish a backfill requirement quantity to return the final slope configuration to its original Reclamation Plan (RP 78-003) design.

Approximately 976,300 cubic yards of sand and gravel will be extracted from the site. The annual rate of extraction will vary as it is dependent on market demand. Extractive operations will occur at the same rate of current operations, consisting of 312 days per year. On average, it is expected that the site will generate 15 truck trips per day. These trips are representative of historical high and low market demands that have occurred at

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<sup>1</sup> County of San Diego Department of Planning and Land Use. *Guidelines for Determining Significance And Report Format And Content Requirements Air Quality*. Available at <http://www.sdcounty.ca.gov/dplu/docs/AQ-Guidelines.pdf>

this vested site. During the past five years, annual production at the site would have required approximately 6 - 17 trips per day. It is possible that up to 60 truck trips could be generated, in a single day, during extremely busy conditions. These trips include those required for backfilling and do not represent a higher volume than existing daily trips at the site. It is anticipated that many of the trucks arriving to pick up material will also be delivering material for backfill. However, until resources are fully extracted from the site, trucks arriving with fill will not outnumber those leaving with material purchased.

There are two primary traffic routes that trucks will utilize to bring material to the site. These routes are the same routes that are currently used to access the project site and do not represent a change to current operations. The primary access route to the site from the south is achieved by exiting Via Rancho Parkway from Interstate 15 and traveling 5 miles east via San Pasqual Road, to San Pasqual Valley Road (SR-78). The primary access route to the site from the north is via SR-78 east at its intersection with Interstate 15, continuing 5.75 miles to the southeast as SR-78 becomes San Pasqual Valley Road. The northerly and southerly routes access the Inland Valley Materials driveway on the north side of San Pasqual Valley Road at its intersection with Old San Pasqual Road. The driveway continues for an additional 0.8 miles until the site is reached. It is unknown exactly where the backfill sources will originate from. Backfill materials will likely be imported from a variety of construction sites within the region. There will be no increase in total truck trips per day as compared to those generated by current operations.

Cut slopes will range in height from 100 to 150 feet, during active mining operations, with a temporary quarry floor at 372 feet AMSL. Access will be provided to the quarry floor by an approximate 30-foot wide access road with a 10% gradient. Following extraction, material will be screened and washed to create finished aggregate products. After processing, finished products will be loaded into haul trucks and transported off-site to various end users.

Reclamation will occur in one phase and will commence after the completion of extraction activities at the site. Reclamation will involve the placement of about 813,200 cubic yards of backfill to create two nearly level pads. The main pad will total approximately 8 acres with an average elevation of about 460 feet AMSL. The smaller pad at the northern end of the site will total approximately 1.5 acres with an average elevation of about 452 feet AMSL. All conditions and requirements of RP 78-003 will remain in effect.

### Equipment

Equipment used for reclamation activities will be the same as the equipment currently used onsite for mining activities:

- 2 - Caterpillar D9 Bulldozer
- 2 - Volvo L180C Front-end Loader
- 2 - Caterpillar 980H Front-end Loader
- 2 - Caterpillar 330C Excavator

- 2 - Caterpillar 769D Haul Truck
- 1 – Water Truck

### Air Quality

The proposed project has the potential for creating dust and particulate matter onsite during reclamation activities. Additionally, criteria air pollutant and ozone precursor emissions would be created due to use of diesel equipment onsite and truck travel for backfill transport.

Reclamation will involve the placement of about 813,200 cubic yards of backfill to create two nearly level pads. The applicant has indicated that up to 60 truck trips could be generated, in a single day, during extremely busy conditions. This equates to a backfill intensity of 1,020 cubic yards per day, based on a truck capacity of 17 cubic yards. The reclamation would occur for 312 days per year, on average. It was assumed that backfill sources would be located within a 20 mile radius of the site. Reclamation activities would involve the use of the equipment listed above. The water truck will be operated on an as-needed basis for appropriate dust control intermittently during the day.

Air emissions associated with backfill material handling, onsite diesel equipment, and backfill material transport were estimated based on the description provided above. The worst-case daily emissions are shown in Table 1.

**Table 1: Worst Case Daily Emissions (lbs/day)**

<b>Source</b>	<b>ROG</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
Onsite Backfill Activities <sup>1</sup>	–	–	–	–	87.52	18.28
Off-road Equipment	9.24	76.98	33.53	<0.01	2.86	2.63
Truck Trips	3.28	44.31	15.88	0.09	1.98	1.62
Worker Trips	0.07	0.12	2.22	<0.01	0.02	0.01
<b>Maximum Daily Emissions</b>	<b>12.59</b>	<b>121.40</b>	<b>51.63</b>	<b>0.09</b>	<b>92.38</b>	<b>22.54</b>
<i>DPLU Screening Level Thresholds</i>	<i>75</i>	<i>250</i>	<i>550</i>	<i>250</i>	<i>100</i>	<i>55</i>
Exceeds Threshold?	No	No	No	No	No	No

ROG = Reactive organic gases; NO<sub>x</sub> = Oxides of nitrogen; CO = Carbon monoxide; SO<sub>x</sub> = Oxides of sulfur; PM<sub>10</sub> = Respirable particulate matter; PM<sub>2.5</sub> = Fine particulate matter.

Note: Emissions shown are assumed to occur on the worst day when all activities overlap. This represents a conservative scenario to estimate maximum daily emissions.

<sup>1</sup> Fugitive dust emissions are based on compliance with San Diego Air Pollution Control District's Rule 55 (Fugitive Dust) assuming a watering frequency of twice a day.

Model output files and calculation details are included in Attachment A.

As shown in Table 1, worst case air quality emissions during reclamation would not exceed PDS's SLTs. The project's impact would be less than significant.

### Greenhouse Gases

The County has prepared *Draft Guidelines for Determining Significance and Draft Report Format and Content Requirements* for addressing climate change in CEQA

documents<sup>2</sup>. The County has also adopted a Climate Action Plan (CAP) that includes greenhouse gas (GHG) reduction measures that, if fully implemented, would achieve an emissions reduction target that is consistent with the state-mandated reduction target embodied in AB 32. A set of project-specific implementing thresholds are included in the Draft Guidelines that will be used to ensure consistency of new projects with the County's CAP and the GHG emission reduction target. Development projects that could have cumulatively considerable GHG emissions impacts would need to incorporate relevant measures from the County's CAP and use one of the implementing thresholds from the Significance Guidelines – Efficiency Threshold, Bright Line Threshold, Stationary Source Threshold, or Performance Threshold-to assess significance.

It should be noted that an individual project's GHG emissions will generally not result in direct impacts under CEQA, as the climate change issue is global in nature, however an individual project could be found to contribute to a potentially significant cumulative impact. CEQA Guidelines Section 15130(f) states that an EIR shall analyze greenhouse gas emissions resulting from a proposed project when the incremental contribution of those emissions may be cumulatively considerable.

The County developed screening criteria for a range of project types and sizes to identify smaller projects that would have less-than-cumulatively considerable GHG emissions impacts. If a proposed project is the same type and equal to or smaller than the project size listed in the Guidelines, it is presumed that construction and operational GHG emissions for that project would not exceed the Bright Line Threshold of 2,500 metric tons of carbon dioxide equivalent (MTCO<sub>2e</sub>) per year, and there would be a less-than-cumulatively considerable impact.

Based on the URBEMIS modeling conducted for the project, average annual GHG emissions would be approximately 1,742 metric tons per year (CO<sub>2</sub> emissions were converted to CO<sub>2e</sub> by using a conservative 5% factor to account for methane and nitrous oxide emissions consistent with guidance from the U.S. Environmental Protection Agency<sup>3</sup>). Average annual emissions were estimated based on an average of 15 truck trips per day with reclamation occurring over 312 days per year. Water use at the site would contribute a minor amount of GHG emissions. However, total annual emissions would be below the Bright Line Threshold of 2,500 metric tons per year. Project GHG impacts would not be cumulatively considerable. In addition, the project would install a Smart Meter for tracking energy use onsite and would be consistent with CAP Measure E-4.

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<sup>2</sup> County of San Diego Department of Planning and Land Use. *Guidelines for Determining Significance And Report Format And Content Requirements – Climate Change*. <http://www.sdcountry.ca.gov/dplu/advance/climateactionplan.html>

<sup>3</sup> U.S. Environmental Protection Agency. *Climate Leaders Greenhouse Gas Inventory Protocol Core Module Guidance*. Direct Emissions from Mobile Combustion Sources. EPA430-K-08-004. May 2008.

**ATTACHMENT A**

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name:

Project Name: Inland Valley Reclamation

Project Location: California State-wide

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2014 TOTALS (lbs/day unmitigated)	12.59	121.40	51.63	0.09	155.12	4.51	159.62	32.44	4.14	36.58	20,945.86
2014 TOTALS (lbs/day mitigated)	12.59	121.40	51.63	0.09	87.87	4.51	92.38	18.39	4.14	22.54	20,945.86

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 1/1/2014-12/31/2014 Active Days: 261	<b>12.59</b>	<b>121.40</b>	<b>51.63</b>	<b>0.09</b>	<b>155.12</b>	<b>4.51</b>	<b>159.62</b>	<b>32.44</b>	<b>4.14</b>	<b>36.58</b>	<b>20,945.86</b>
Mass Grading 01/01/2014-12/31/2014	12.59	121.40	51.63	0.09	155.12	4.51	159.62	32.44	4.14	36.58	20,945.86
Mass Grading Dust	0.00	0.00	0.00	0.00	154.76	0.00	154.76	32.32	0.00	32.32	0.00
Mass Grading Off Road Diesel	9.24	76.98	33.53	0.00	0.00	2.86	2.86	0.00	2.63	2.63	10,846.65
Mass Grading On Road Diesel	3.28	44.31	15.88	0.09	0.34	1.64	1.98	0.11	1.51	1.62	9,817.91
Mass Grading Worker Trips	0.07	0.12	2.22	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.30

Phase Assumptions

Phase: Mass Grading 1/1/2014 - 12/31/2014 - Reclamation

Total Acres Disturbed: 13.74

Maximum Daily Acreage Disturbed: 3.44

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 1020 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 2438.62

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Off-Road Equipment:

- 2 Excavators (247 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Off Highway Trucks (518 hp) operating at a 0.57 load factor for 4 hours per day
- 2 Rubber Tired Dozers (464 hp) operating at a 0.59 load factor for 8 hours per day
- 2 Rubber Tired Loaders (284 hp) operating at a 0.54 load factor for 8 hours per day
- 2 Tractors/Loaders/Backhoes (393 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 4 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 1/1/2014-12/31/2014 Active Days: 261	<b><u>12.59</u></b>	<b><u>121.40</u></b>	<b><u>51.63</u></b>	<b><u>0.09</u></b>	<b><u>87.87</u></b>	<b><u>4.51</u></b>	<b><u>92.38</u></b>	<b><u>18.39</u></b>	<b><u>4.14</u></b>	<b><u>22.54</u></b>	<b><u>20,945.86</u></b>
Mass Grading 01/01/2014-12/31/2014	12.59	121.40	51.63	0.09	87.87	4.51	92.38	18.39	4.14	22.54	20,945.86
Mass Grading Dust	0.00	0.00	0.00	0.00	87.52	0.00	87.52	18.28	0.00	18.28	0.00
Mass Grading Off Road Diesel	9.24	76.98	33.53	0.00	0.00	2.86	2.86	0.00	2.63	2.63	10,846.65
Mass Grading On Road Diesel	3.28	44.31	15.88	0.09	0.34	1.64	1.98	0.11	1.51	1.62	9,817.91
Mass Grading Worker Trips	0.07	0.12	2.22	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.30

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/1/2014 - 12/31/2014 - Reclamation

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name:

Project Name: Inland Valley Reclamation

Project Location: California State-wide

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2014 TOTALS (lbs/day unmitigated)	12.59	121.40	51.63	0.09	155.12	4.51	159.62	32.44	4.14	36.58	20,945.86
2014 TOTALS (lbs/day mitigated)	12.59	121.40	51.63	0.09	87.87	4.51	92.38	18.39	4.14	22.54	20,945.86

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 1/1/2014-12/31/2014 Active Days: 261	<b>12.59</b>	<b>121.40</b>	<b>51.63</b>	<b>0.09</b>	<b>155.12</b>	<b>4.51</b>	<b>159.62</b>	<b>32.44</b>	<b>4.14</b>	<b>36.58</b>	<b>20,945.86</b>
Mass Grading 01/01/2014-12/31/2014	12.59	121.40	51.63	0.09	155.12	4.51	159.62	32.44	4.14	36.58	20,945.86
Mass Grading Dust	0.00	0.00	0.00	0.00	154.76	0.00	154.76	32.32	0.00	32.32	0.00
Mass Grading Off Road Diesel	9.24	76.98	33.53	0.00	0.00	2.86	2.86	0.00	2.63	2.63	10,846.65
Mass Grading On Road Diesel	3.28	44.31	15.88	0.09	0.34	1.64	1.98	0.11	1.51	1.62	9,817.91
Mass Grading Worker Trips	0.07	0.12	2.22	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.30

Phase Assumptions

Phase: Mass Grading 1/1/2014 - 12/31/2014 - Reclamation

Total Acres Disturbed: 13.74

Maximum Daily Acreage Disturbed: 3.44

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 1020 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 2438.62

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Off-Road Equipment:

- 2 Excavators (247 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Off Highway Trucks (518 hp) operating at a 0.57 load factor for 4 hours per day
- 2 Rubber Tired Dozers (464 hp) operating at a 0.59 load factor for 8 hours per day
- 2 Rubber Tired Loaders (284 hp) operating at a 0.54 load factor for 8 hours per day
- 2 Tractors/Loaders/Backhoes (393 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 4 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 1/1/2014-12/31/2014 Active Days: 261	<b>12.59</b>	<b>121.40</b>	<b>51.63</b>	<b>0.09</b>	<b>87.87</b>	<b>4.51</b>	<b>92.38</b>	<b>18.39</b>	<b>4.14</b>	<b>22.54</b>	<b>20,945.86</b>
Mass Grading 01/01/2014-12/31/2014	12.59	121.40	51.63	0.09	87.87	4.51	92.38	18.39	4.14	22.54	20,945.86
Mass Grading Dust	0.00	0.00	0.00	0.00	87.52	0.00	87.52	18.28	0.00	18.28	0.00
Mass Grading Off Road Diesel	9.24	76.98	33.53	0.00	0.00	2.86	2.86	0.00	2.63	2.63	10,846.65
Mass Grading On Road Diesel	3.28	44.31	15.88	0.09	0.34	1.64	1.98	0.11	1.51	1.62	9,817.91
Mass Grading Worker Trips	0.07	0.12	2.22	0.00	0.01	0.01	0.02	0.00	0.01	0.01	281.30

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/1/2014 - 12/31/2014 - Reclamation  
 For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:  
 PM10: 55% PM25: 55%

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Ascent\Projects\County of San Diego PDS\Inland Valley Materials\Inland Valley Avg Annual.urb924

Project Name: Inland Valley Reclamation

Project Location: California State-wide

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2014 TOTALS (tons/year unmitigated)	1.34	11.76	5.28	0.00	8.43	0.44	8.87	1.76	0.40	2.16	1,829.03
2014 TOTALS (tons/year mitigated)	1.34	11.76	5.28	0.00	4.77	0.44	5.21	1.00	0.40	1.40	1,829.03
Percent Reduction	0.00	0.00	0.00	0.00	43.37	0.00	41.24	43.33	0.00	35.28	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2014	1.34	11.76	5.28	0.00	8.43	0.44	8.87	1.76	0.40	2.16	1,829.03
Mass Grading 01/01/2014-12/31/2014	1.34	11.76	5.28	0.00	8.43	0.44	8.87	1.76	0.40	2.16	1,829.03
Mass Grading Dust	0.00	0.00	0.00	0.00	8.42	0.00	8.42	1.76	0.00	1.76	0.00
Mass Grading Off Road Diesel	1.21	10.05	4.38	0.00	0.00	0.37	0.37	0.00	0.34	0.34	1,415.49
Mass Grading On Road Diesel	0.13	1.70	0.61	0.00	0.01	0.06	0.08	0.00	0.06	0.06	376.83
Mass Grading Worker Trips	0.01	0.02	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.71

Phase Assumptions

Phase: Mass Grading 1/1/2014 - 12/31/2014 - Reclamation

Total Acres Disturbed: 13.74

Maximum Daily Acreage Disturbed: 3.44

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 255 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 717.24

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Off-Road Equipment:

- 2 Excavators (247 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Off Highway Trucks (518 hp) operating at a 0.57 load factor for 4 hours per day
- 2 Rubber Tired Dozers (464 hp) operating at a 0.59 load factor for 8 hours per day
- 2 Rubber Tired Loaders (284 hp) operating at a 0.54 load factor for 8 hours per day
- 2 Tractors/Loaders/Backhoes (393 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 4 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2014	1.34	11.76	5.28	0.00	4.77	0.44	5.21	1.00	0.40	1.40	1,829.03
Mass Grading 01/01/2014-12/31/2014	1.34	11.76	5.28	0.00	4.77	0.44	5.21	1.00	0.40	1.40	1,829.03
Mass Grading Dust	0.00	0.00	0.00	0.00	4.76	0.00	4.76	0.99	0.00	0.99	0.00
Mass Grading Off Road Diesel	1.21	10.05	4.38	0.00	0.00	0.37	0.37	0.00	0.34	0.34	1,415.49
Mass Grading On Road Diesel	0.13	1.70	0.61	0.00	0.01	0.06	0.08	0.00	0.06	0.06	376.83
Mass Grading Worker Trips	0.01	0.02	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.71

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/1/2014 - 12/31/2014 - Reclamation  
 For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:  
 PM10: 55% PM25: 55%