<table>
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<th>Hot Spot #</th>
<th>Feature Type</th>
<th>Hot Spot-Proposed Trail Interaction</th>
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<th>Active Erosion</th>
<th>Active Depos.</th>
<th>Prox to stream or SEZ</th>
<th>Connect. to stream or SEZ</th>
<th>Overall Priority</th>
<th>Problem Description, Notes</th>
<th>Mitigation Recommendations</th>
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<td>19</td>
<td>road-drainage crossing</td>
<td>N</td>
<td>H</td>
<td>Y</td>
<td>Y</td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>lower end of dipper drainage crosses summer road; know to carry moderate flow during spring runoff</td>
<td>install mulch berms in channel above and below road; create infiltration/spreading area below road</td>
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<tr>
<td>20</td>
<td>drainage</td>
<td>Y</td>
<td>L</td>
<td>Y</td>
<td>Y</td>
<td>M</td>
<td>L</td>
<td>H</td>
<td>proposed trail alignment crosses defined drainage (created by concentrated runoff from water bars on Orion's ski run upslope)</td>
<td>realign trail to avoid drainage or design stable drainage crossing</td>
</tr>
<tr>
<td>21</td>
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<td>Y</td>
<td>M</td>
<td>Y</td>
<td>Y</td>
<td>M</td>
<td>L</td>
<td>H</td>
<td>proposed trail alignment crosses defined drainage (created by concentrated runoff from water bars on Orion's ski run upslope)</td>
<td>realign trail to avoid drainage or design stable drainage crossing</td>
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<td>L</td>
<td>Y</td>
<td>Y</td>
<td>M</td>
<td>L</td>
<td>H</td>
<td>proposed trail alignment crosses defined drainage (created by concentrated runoff from water bars on Orion's ski run upslope)</td>
<td>realign trail to avoid drainage or design stable drainage crossing</td>
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<td>H</td>
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<td>M</td>
<td>L</td>
<td>H</td>
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<td>M</td>
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<td>H</td>
<td>proposed trail alignment crosses defined drainage (created by concentrated runoff from water bars on Orion's ski run upslope)</td>
<td>realign trail to avoid drainage or design stable drainage crossing</td>
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Table 2. Points of Interest (NV-1 Watershed)

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<th>ID</th>
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<th>Active Erosion</th>
<th>Active Depos.</th>
<th>Prox to stream or SEZ</th>
<th>Connect. to stream or SEZ</th>
<th>Problem Description, Notes</th>
<th>Mitigation Recommendations</th>
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<tbody>
<tr>
<td>1</td>
<td>proposed trail</td>
<td>N</td>
<td>L</td>
<td>N</td>
<td>N</td>
<td>L</td>
<td>M</td>
<td>no concentrated flow in proposed advanced trail alignment; steep rocky depositional area below</td>
<td>no action recommended</td>
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<td>proposed trail</td>
<td>N</td>
<td>L</td>
<td>N</td>
<td>N</td>
<td>L</td>
<td>M</td>
<td>moderate slope; lots of rocks/logs; no obvious erosion or concentrated surface runoff</td>
<td>no action recommended</td>
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<tr>
<td>ID</td>
<td>Feature Type</td>
<td>Hot Spot-Proposed Trail Interaction</td>
<td>Erosion Risk</td>
<td>Active Erosion</td>
<td>Active Depos.</td>
<td>Prox to stream or SEZ</td>
<td>Connect. to stream or SEZ</td>
<td>Problem Description, Notes</td>
<td>Mitigation Recommendations</td>
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<td>--------------</td>
<td>----------------------</td>
<td>--------------------------</td>
<td>-----------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>3</td>
<td>proposed trail</td>
<td>N L N L L</td>
<td>L</td>
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<td></td>
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<td>N H Y Y L H</td>
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<td></td>
<td>dipper drainage (legacy impact)</td>
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## EROSION HOT SPOT PHOTOS

Table 3. Erosion Hot Spot Photo Summary (NV-1 Watershed)

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<th>Photo 2</th>
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<tr>
<td>2</td>
<td><img src="image3" alt="Photo 1" /></td>
<td><img src="image4" alt="Photo 2" /></td>
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<tr>
<td>3</td>
<td><img src="image5" alt="Photo 1" /></td>
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### Table 4. Points of Interest Photo Summary (NV-1 Watershed)

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</tr>
<tr>
<td>2</td>
<td><img src="image1.jpg" alt="Image 1" /></td>
<td><img src="image2.jpg" alt="Image 2" /></td>
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<tr>
<td>---</td>
<td>---</td>
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</tr>
<tr>
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<td><img src="image5.jpg" alt="Image 5" /></td>
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**EROSION HOT SPOT MAPS**

See next page.
Figure 1. EfRA Summary Map showing hot spots in NV-1 watershed, zoomed in to hot spot locations.
Figure 2. EfRA Summary Map showing hot spots in Mott Canyon (NV-1), zoomed out to show entire NV-1 watershed.

Mott Canyon (NV-1) Erosion Assessment - 2014
Page 18
LITERATURE CITED

APPENDIX 3.5-A
AIR QUALITY MODELING TABLES
<table>
<thead>
<tr>
<th>Equipment Description</th>
<th>Load (lbs)</th>
<th>Tier</th>
<th>NOx (g/ton)</th>
<th>CO (g/ton)</th>
<th>VOC (g/ton)</th>
<th>SOx (g/ton)</th>
<th>PM10 (g/ton)</th>
<th>PM2.5 (g/ton)</th>
<th>CO2 (metric tons)</th>
<th>CH4 (metric tons)</th>
<th>N2O (metric tons)</th>
<th>CO2e (metric tons)</th>
<th>NOx (g/ton)</th>
<th>CO (g/ton)</th>
<th>VOC (g/ton)</th>
<th>SOx (g/ton)</th>
<th>PM10 (g/ton)</th>
<th>PM2.5 (g/ton)</th>
<th>CO2 (metric tons)</th>
<th>CH4 (metric tons)</th>
<th>N2O (metric tons)</th>
<th>CO2e (metric tons)</th>
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<td>Off</td>
<td>3.49 (2)</td>
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<td>2.12E+00</td>
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</tbody>
</table>

**Notes:**
- **ARB Off-Road or EPA Nonroad Emission Factors (g/ton):** Specific factors vary based on the type of equipment and its operational conditions.
- **Emission Inventory:** Contributions vary depending on the location and type of activity.
- **CO2 emission factor for gasoline (metric tons CO2/bbl fuel):** Calculated using the empirical formula given.
- **CO2 emission factor for Distillate Fuel No. 2 (metric tons CO2/bbl fuel):** Calculated using the empirical formula given.
### Appendix 3.4B Table 2

**Construction Fugitive Dust Emission Summary in California**

#### Heavenly Mountain Resort Epic Discovery Project

**Daily Construction Fugitive Dust Emissions in California**

<table>
<thead>
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<th>Equipment</th>
<th>Project Phase:</th>
<th>Daily Fugitive Dust Emission by Construction Phase</th>
<th>PM&lt;sub&gt;2.5&lt;/sub&gt; (lb/day)</th>
<th>PM&lt;sub&gt;10&lt;/sub&gt; (lb/day)</th>
<th>PM&lt;sub&gt;2.5&lt;/sub&gt; (tpy)</th>
<th>PM&lt;sub&gt;10&lt;/sub&gt; (tpy)</th>
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<td>Construction</td>
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<td>0.13</td>
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<tr>
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<td>0.0100</td>
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**Annual Construction Fugitive Dust Emissions in California**

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<th>Equipment</th>
<th>Project Phase:</th>
<th>Daily Fugitive Dust Emission by Construction Phase</th>
<th>PM&lt;sub&gt;2.5&lt;/sub&gt; (lb/day)</th>
<th>PM&lt;sub&gt;10&lt;/sub&gt; (lb/day)</th>
<th>PM&lt;sub&gt;2.5&lt;/sub&gt; (tpy)</th>
<th>PM&lt;sub&gt;10&lt;/sub&gt; (tpy)</th>
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<tr>
<td></td>
<td>Site Prep</td>
<td>Grading</td>
<td>Construction</td>
<td></td>
<td></td>
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<tr>
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<tr>
<td><strong>PM&lt;sub&gt;2.5&lt;/sub&gt; Subtotal (lbs/day)</strong></td>
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<tr>
<td><strong>PM&lt;sub&gt;10&lt;/sub&gt; Subtotal (lbs/day)</strong></td>
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<td></td>
<td></td>
<td>0.0090</td>
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### Construction Offsite On-Road Vehicle Emissions in California

#### Materials Delivery Truck Emissions in California

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<tr>
<th>Maximum Number of Deliveries per Day</th>
<th>Average Vehicle-Miles Traveled per Day</th>
<th>Emission Factors (lbs/VMT)</th>
<th>Daily Emissions (lbs/day)</th>
<th>Daily Emissions (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NOx</td>
<td>CO</td>
<td>VOC</td>
</tr>
<tr>
<td>1</td>
<td>200</td>
<td>0.0270</td>
<td>0.0036</td>
<td>0.00077</td>
</tr>
<tr>
<td>Paved-Road Fugitive Dust</td>
<td></td>
<td>0.0006</td>
<td>0.00049</td>
<td>0.00077</td>
</tr>
</tbody>
</table>

1) Maximum emissions occur during Structure Construction phase.
2) Diesel fuel CO2 emission factor (kg CO2/MMBtu) = 73.96 [(EPA, 2013 Revisions to the Greenhouse Gas Reporting Rule and Final Confidentiality Determinations for New or Substantially Revised Data Elements; Final Rule, Federal Register, Volume 78, Number 230, Table C-1 to Subpart C, p. 71951, November 29, 2013.)]
3) Diesel fuel CH4 emission factor (kg CH4/MMBtu) = 0.003 [(EPA, 2013 Revisions to the Greenhouse Gas Reporting Rule and Final Confidentiality Determinations for New or Substantially Revised Data Elements; Final Rule, Federal Register, Volume 78, Number 230, Table C-2 to Subpart C, p. 71952, November 29, 2013.)]
4) Diesel fuel N2O emission factor (kg N2O/MMBtu) = 0.0006 Ibid
5) CH4 Global Warming Potential (-) = 25 [(EPA, 2013 Revisions to the Greenhouse Gas Reporting Rule and Final Confidentiality Determinations for New or Substantially Revised Data Elements; Final Rule, Federal Register, Volume 78, Number 230, Table 2, p. 71952, November 29, 2013.)]
## Construction Worker Vehicle Emissions in California

### Appendix 3.4 Table 3

**Construction Offsite On-Road Vehicle Emissions in California**

**Heavenly Mountain Resort Epic Discovery Project**

<table>
<thead>
<tr>
<th>Max Number of Workers Per Day</th>
<th>Average Employee Round Trips Per Day</th>
<th>Average Round Trip Distance (Miles)</th>
<th>Carpool Factor (No. People per Vehicle)</th>
<th>Vehicle Miles Traveled Per Day (Miles)</th>
<th>Emission Factors (lbs/vmt)</th>
<th>Daily Emissions (lbs/day)</th>
</tr>
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<tr>
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<td>0.341 0.26</td>
</tr>
<tr>
<td>Paved-Road Fugitive Dust</td>
<td></td>
<td></td>
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<td>0.0047 0.0012</td>
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### Worker Travel Daily Emissions in California (Maximum)

<table>
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<tr>
<th>Max Number of Workers Per Day</th>
<th>Average Employee Round Trips Per Day</th>
<th>Average Round Trip Distance (Miles)</th>
<th>Carpool Factor (No. People per Vehicle)</th>
<th>Vehicle Miles Traveled Per Day (Miles)</th>
<th>Emission Factors (lbs/vmt)</th>
<th>Daily Emissions (lbs/day)</th>
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<tbody>
<tr>
<td>13.3</td>
<td>13.3</td>
<td>40</td>
<td></td>
<td>318</td>
<td>NOx: 0.00024, CO: 0.00026, VOC: 0.000011, SOx: 0.0000229, PM10: 0.000159, PM2.5: 1.13, CH4: 0.00000046, N2O: 0.000000127, O2: 2.3, CO2: 0.00000038, PM10: 0.000015, PM2.5: 0.00046, CH4: 0.00019, N2O: 0.000127, O2: 2.3</td>
<td>0.341 0.26</td>
</tr>
<tr>
<td>Paved-Road Fugitive Dust</td>
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<td></td>
<td></td>
<td></td>
<td>0.0047 0.0012</td>
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</tr>
</tbody>
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### Worker Travel Annual Emissions in California

<table>
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<th>Max Number of Workers Per Day</th>
<th>Average Employee Round Trips Per Day</th>
<th>Average Round Trip Distance (Miles)</th>
<th>Carpool Factor (No. People per Vehicle)</th>
<th>Vehicle Miles Traveled Per Year</th>
<th>Emission Factors (lbs/vmt)</th>
<th>Annual Emissions (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.3</td>
<td>13.3</td>
<td>40</td>
<td></td>
<td>318</td>
<td>NOx: 0.00024, CO: 0.00026, VOC: 0.000011, SOx: 0.0000229, PM10: 0.000159, PM2.5: 1.13, CH4: 0.00000046, N2O: 0.000000127, O2: 2.3, CO2: 0.00000038, PM10: 0.000015, PM2.5: 0.00046, CH4: 0.00019, N2O: 0.000127, O2: 2.3</td>
<td>0.341 0.26</td>
</tr>
<tr>
<td>Paved-Road Fugitive Dust</td>
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<td></td>
<td></td>
<td></td>
<td>0.0047 0.0012</td>
<td>0.0049 0.0012</td>
</tr>
</tbody>
</table>

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4/25/2014

Emission Inventory20140421;CA_ConstructionOffsiteEmissABT3
### Emission Factors

#### Tier

<table>
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<tbody>
<tr>
<td>4</td>
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</tr>
</tbody>
</table>

#### Emission Inventory

**201405032015 Total Const Equip Emis ABT**

#### 13) The sulfur concentration in gasoline is assumed to be 30 ppmw, based on EPA News Release.


#### 9) Sweyco Trail Dozer Model 480 specification.

#### 19) Diesel fuel CH4 emission factor (kg CH4/MMBtu) = 0.003 (EPA. 2013 Revisions to the Greenhouse Gas Reporting Rule and Revised Data Elements; Final Rule, Federal Register, Volume 78, Number 230, Table C-2 to Subpart C, p. 71952, November 29, 2013.)

#### 18) Diesel fuel CO2 emission factor (metric tons CO2/bbl fuel) = 0.4296 (CFR Part 98, Subpart MM, Table MM-1).

#### 17) Diesel fuel SO2 emission factor (kg SO2/MMBtu) = 0.1346 (CFR Part 98, Subpart MM, Table MM-1).

#### 16) Diesel fuel NOx emission factor (kg NOx/MMBtu) = 0.4296 (CFR Part 98, Subpart MM, Table MM-1).

#### 15) Drill Rig 82 (1) 0.75 Off 40 8 1.0 8 40 4.3157 (16) 1.2363 (16) 0.2513 (16) 0.0049 (16) 0.1335 (16) 0.1228 (16) 521 (16) 0.021 (18,19) 0.0042 (18,20) 523 (21,22) ------ - - - -


#### 13) CalEEMod (Version 2013.2.2) default value.

#### 12) OFFROAD2007 uses a PM2.5/PM10 ratio = 0.5609.

#### 11) Calculated from BSFC assuming 15 ppmw sulfur in Diesel fuel.

#### 10) 2013 Yamaha Rhino 700 FI 4x4 40 (10) 0.57 (11) Off 3 312.0 24.0 7.5 180 2,340 8.43 (12) 107.23 (12) 3.85 (12) 0.0100 (13) 0.06 (12) 0.055 (6) 456 (7) 0.018 (18,19) 0.0037 (18,20) 457 (21,22) ------ - - - -

#### 9) Sweyco Trail Dozer, tracked 80 (9) 0.64 Off 3 104.0 8 1.5 12 156 5.01 (4) 0.867 (2) 0.19 (4) 0.0050 (5) 0.24 (4) 0.22 (6) 531 (7) 0.022 (18,19) 0.0043 (18,20) 533 (21,22) ------ - - - -

#### 8) Diesel fuel N2O emission factor (kg N2O/MMBtu) = 0.0006 (EPA. 2013 Revisions to the Greenhouse Gas Reporting Rule and Revised Data Elements; Final Rule, Federal Register, Volume 78, Number 230, Table C-2 to Subpart C, p. 71952, November 29, 2013.)

#### 7) CH4 Global Warming Potential (-) = 25 (EPA. 2013 Revisions to the Greenhouse Gas Reporting Rule and Final Data Elements; Final Rule, Federal Register, Volume 78, Number 230, Table 2, p. 71909, November 29, 2013.)

#### 6) N2O Global Warming Potential (-) = 298 (EPA. 2013 Revisions to the Greenhouse Gas Reporting Rule and Final Data Elements; Final Rule, Federal Register, Volume 78, Number 230, Table 2, p. 71909, November 29, 2013.)

#### 5) Calculated from BSFC assuming 15 ppmw sulfur in Diesel fuel.

#### 4) Estimated

#### 3) CalEEMod (Version 2013.2.2) default value.

#### 2) EPA, Exhaust and On-Road Emission Factors for Advanced Engine Modeling – Compression Ignition, Report NR-009d, EPA-420-R-10-018, Table A4, July 2010


---

### Appendix 3.4 Table 4

**Construction Offsite Equipment Hours, Emissions Factors, and Emissions in California**

| Structural Construction Subtotal: | 6,232.0 | 40.0 | - | - | - |

---

5/8/2014

Emission Inventory20140303015TotalConstEqPemEsc1A74
## Table 4

**Construction Onsite Offroad Equipment Hours, Emission Factors, and Emissions in California**

### Heavenly Mountain Resort Epic Discovery Project

<table>
<thead>
<tr>
<th></th>
<th>NOx</th>
<th>CO</th>
<th>VOC</th>
<th>SOx</th>
<th>PM10</th>
<th>PM2.5</th>
<th>CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
<th>NOx</th>
<th>CO</th>
<th>VOC</th>
<th>SOx</th>
<th>PM10</th>
<th>PM2.5</th>
<th>CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
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<tr>
<td></td>
<td>5.10E-01</td>
<td>4.36E-01</td>
<td>2.19E-01</td>
<td>6.69E-01</td>
<td>6.33E-03</td>
<td>5.82E-03</td>
<td>3.41E+02</td>
<td>1.38E-02</td>
<td>2.77E-03</td>
<td>3.42E+02</td>
<td>3.32E-03</td>
<td>2.83E-03</td>
<td>1.42E-03</td>
<td>4.35E-03</td>
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<td>3.78E-05</td>
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<td>8.99E-05</td>
<td>1.80E-05</td>
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### Weight (tons)

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</tbody>
</table>

5/8/2014

Emission Inventory201405032015TotalConstEquipEmisABT4
### Appendix 3.4 Table 5
#### Total Project Construction Fugitive Dust Emission Summary

**Heavenly Mountain Resort Epic Discovery Project**

<table>
<thead>
<tr>
<th>Total Project Construction Daily Fugitive Dust Emissions</th>
<th>Total Project Construction Annual Fugitive Dust Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PM_{2.5} (lb/day)</strong></td>
<td><strong>PM_{2.5} (tpy)</strong></td>
</tr>
<tr>
<td><strong>Equipment</strong></td>
<td><strong>Project Phase:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUCK WATER 3600-4000G F-R SPR BAR / MONITOR 2AX D</td>
<td></td>
</tr>
<tr>
<td>TRAIL DOZER</td>
<td></td>
</tr>
<tr>
<td>MINI-EXCAVATOR</td>
<td></td>
</tr>
<tr>
<td>BACKHOE</td>
<td></td>
</tr>
<tr>
<td>FORKLIFT</td>
<td></td>
</tr>
<tr>
<td>PM_{2.5} Subtotal (lb/day)</td>
<td>0.30</td>
</tr>
</tbody>
</table>

| **PM_{10} (lb/day)**                                   | **PM_{10} (tpy)**                                      |
| **Equipment**                                          | **Project Phase:**                                    | **PM_{10} (lb/day)**                                   | **PM_{10} (tpy)**                                      |
|                                                          |                                                          | Site Prep | Grading | Structure Construction | Site Prep | Grading | Structure Construction |
| TRUCK WATER 3600-4000G F-R SPR BAR / MONITOR 2AX D     |                                                          | 2.7       | 2.7     | 2.7                   | 0.17      | 0.17    | 0.12               |
| TRAIL DOZER                                            |                                                          | 0.19      | 0.19    | 0.19                  | 0.0013    | 0.0013  | 0.0060             |
| MINI-EXCAVATOR                                         |                                                          | 0.35      | 0.35    | 0.35                  | 0.00023   | 0.00023 | 0.011              |
| BACKHOE                                                |                                                          | 0.34      | 0.34    | 0.34                  | 0.00013   | 0.00013 | 0.00026           |
| FORKLIFT                                               |                                                          | -         | -       | 0.73                  | 0.0091    |          |                   |
| PM_{10} Subtotal (lb/day)                             | 3.0                                                    | 3.5       | 4.3     |                        | 0.019     | 0.022   | 0.15               |

| **PM_{2.5} (lb/day)**                                   | **PM_{2.5} (tpy)**                                      |
| **Equipment**                                          | **Project Phase:**                                    | **PM_{2.5} (lb/day)**                                   | **PM_{2.5} (tpy)**                                      |
|                                                          |                                                          | Site Prep | Grading | Structure Construction | Site Prep | Grading | Structure Construction |
| BOOM TRUCK WITH CRANE                                  |                                                          | -         | -       | 0.10                  | -         | -       | 0.0016             |
| WHEELED LOADER                                         |                                                          | 0.14      | 0.14    | 0.14                  | 0.00042   | 0.00042 | 0.0012             |
| DRILL RIG                                              |                                                          | -         | 0.061   | 0.061                 | 0.00015   | 0.00015 | 0.00046           |
| ATVs                                                   |                                                          | 0.30      | 0.30    | 0.30                  | 0.0019    | 0.0019  | 0.023              |
| PM_{2.5} Subtotal (lb/day)                             | 0.44                                                   | 0.50      | 0.79    |                        | 0.0024    | 0.0025  | 0.026              |
| PM_{2.5} Total (lb/day)                                | 0.74                                                   | 0.9       | 1.3     |                        | 0.0042    | 0.0053  | 0.044              |

| **PM_{10} (lb/day)**                                   | **PM_{10} (tpy)**                                      |
| **Equipment**                                          | **Project Phase:**                                    | **PM_{10} (lb/day)**                                   | **PM_{10} (tpy)**                                      |
|                                                          |                                                          | Site Prep | Grading | Structure Construction | Site Prep | Grading | Structure Construction |
| BOOM TRUCK WITH CRANE                                  |                                                          | -         | -       | 1.0                   | -         | -       | 0.0079             |
| WHEELED LOADER                                         |                                                          | 0.069     | 0.069   | 0.69                  | 0.0010    | 0.0010  | 0.0031             |
| DRILL RIG                                              |                                                          | -         | 0.030   | 0.30                  | 0.00076   | 0.00076 | 0.0023             |
| ATVs                                                   |                                                          | 1.5       | 1.5     | 2.3                   | 0.010     | 0.010   | 0.11               |
| PM_{10} Subtotal (lb/day)                              | 2.2                                                    | 2.5       | 4.4     |                        | 0.011     | 0.034   | 0.28               |
| PM_{10} Total (lb/day)                                 | 5.2                                                    | 6.0       | 8.7     |                        | 0.029     | 0.034   | 0.28               |
## Appendix 3.4 Table 6
### Construction Offsite On-Road Vehicle Emissions in Nevada
#### Heavenly Mountain Resort Epic Discovery Project

### Materials Delivery Truck Peak Daily Emissions in Nevada

<table>
<thead>
<tr>
<th>Maximum Number of Deliveries per Day</th>
<th>Trip Haul Distance (miles)</th>
<th>Vehicle-Miles Traveled per Day</th>
<th>Emission Factors (lbs/VMT)</th>
<th>Daily Emissions (lbs/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>NOx</td>
<td>CO</td>
</tr>
<tr>
<td>1</td>
<td>124</td>
<td>124</td>
<td>0.0270</td>
<td>0.0038</td>
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<tr>
<td>Paved-Road Fugitive Dust</td>
<td></td>
<td></td>
<td>0.056</td>
<td>0.0049</td>
</tr>
</tbody>
</table>

1) Maximum emissions occur during Structure Construction phase.

2) Diesel fuel CO2 emission factor (kg CO2/MMBtu) = 73.96 (EPA, 2013 Revisions to the Greenhouse Gas Reporting Rule and Final Confidentiality Determinations for New or Substantially Revised Data Elements; Final Rule, Federal Register, Volume 78, Number 23.

3) Diesel fuel CH4 emission factor (kg CH4/MMBtu) = 0.003 (EPA, 2013 Revisions to the Greenhouse Gas Reporting Rule and Final Confidentiality Determinations for New or Substantially Revised Data Elements; Final Rule, Federal Register, Volume 78, Number 23.

4) Diesel fuel N2O emission factor (kg N2O/MMBtu) = 0.0006 (Ibid)

5) CH4 Global Warming Potential (–) = 25 (EPA, 2013 Revisions to the Greenhouse Gas Reporting Rule and Final Confidentiality Determinations for New or Substantially Revised Data Elements; Final Rule, Federal Register, Volume 78, Number 23.

6) N2O Global Warming Potential (–) = 298 (Ibid)

### Materials Delivery Truck Annual Emissions in Nevada

<table>
<thead>
<tr>
<th>Number of Deliveries per Year</th>
<th>Average Trip Haul Distance (miles)</th>
<th>Annual Vehicle-Miles Traveled</th>
<th>Emission Factors (lbs/VMT)</th>
<th>Annual Emissions (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>NOx</td>
<td>CO</td>
</tr>
<tr>
<td>26</td>
<td>124</td>
<td>5,944</td>
<td>0.0270</td>
<td>0.0038</td>
</tr>
<tr>
<td>Paved-Road Fugitive Dust</td>
<td></td>
<td></td>
<td>0.056</td>
<td>0.0049</td>
</tr>
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</table>
## Construction Worker Vehicle Emissions in Nevada

### Worker Travel Daily Emissions in Nevada (Maximum)

<table>
<thead>
<tr>
<th>Max Number of Workers Per Day</th>
<th>Average Employee Round Trips Per Day</th>
<th>Number of Round Trips Per Day</th>
<th>Carpool Factor (No. People per Vehicle)</th>
<th>Vehicle Miles Traveled Per Day (Miles)</th>
<th>Emission Factors (lbs/vmt)</th>
<th>Daily Emissions (lbs/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
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<td>15</td>
<td>1</td>
<td>15</td>
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<td>PM10: 0.000224</td>
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<td>PM2.5: 0.000168</td>
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<tr>
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<td>CH4: 0.000088</td>
<td>0.000022</td>
</tr>
<tr>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>CO2e: 22</td>
<td>0.000063</td>
</tr>
</tbody>
</table>

### Paved-Road Fugitive Dust

- NOx: 0.0047
- CO: 0.0012
- VOC: 0.00084
- SOx: 0.00017
- PM10: 0.00029
- PM2.5: 0.000159
- CO2: 1.13
- CH4: 0.000044
- N2O: 0.34
- NOx: 2.3
- CO: 0.27
- VOC: 0.0023
- SOx: 0.0014
- PM10: 0.000224
- PM2.5: 0.000168
- CO2: 23.1
- CH4: 0.000088
- N2O: 0.00034
- CO2e: 22

---

## Worker Travel Annual Emissions in Nevada

### Emission Inventory 20140503; NV_ConstructionOffsiteEmissionsABT6

<table>
<thead>
<tr>
<th>Annual Average (Weighted) Number of Workers Per Day</th>
<th>Average Employee Round Trips Per Day</th>
<th>Total Number of Round Trips</th>
<th>Average Round Trip Distance (Miles)</th>
<th>Carpool Factor (No. People per Vehicle)</th>
<th>Number of Construction</th>
<th>Vehicle Miles Traveled Per Year</th>
<th>Emission Factors (lbs/vmt)</th>
<th>Annual Emissions (tons/yr)</th>
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<td>VOC: 0.00048</td>
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<td>SOx: 0.000091</td>
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<td>PM10: 0.000227</td>
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<td>PM10: 0.000224</td>
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<td>PM2.5: 0.000168</td>
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<td>CO2: 23.1</td>
<td>0.000094</td>
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<td>CH4: 0.000088</td>
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<td></td>
<td>N2O: 0.00034</td>
<td>0.000022</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>CO2e: 22</td>
<td>0.000063</td>
</tr>
</tbody>
</table>

### Paved-Road Fugitive Dust

- NOx: 0.0047
- CO: 0.0012
- VOC: 0.00048
- SOx: 0.000091
- PM10: 0.000227
- PM2.5: 0.000159
- CO2: 1.13
- CH4: 0.000044
- N2O: 0.34
- NOx: 2.3
- CO: 0.27
- VOC: 0.0014
- SOx: 0.00014
- PM10: 0.000224
- PM2.5: 0.000168
- CO2: 23.1
- CH4: 0.000088
- N2O: 0.00034
- CO2e: 22

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(10, Table 2, p. 71909, November 29, 2013.)

Number 230, Table C-1 to Subpart C, p. 71951, November 29, 2013.)

Number 230, Table C-2 to Subpart C, p. 71952, November 29, 2013.)
**Appendix 3.4 Table 7**  
**EMFAC 2011 Emission Factors for Construction Water Truck**  
**Heavenly Mountain Resort Epic Discovery Project**

<table>
<thead>
<tr>
<th>Region</th>
<th>CalYr</th>
<th>Season</th>
<th>Veh_CLASS</th>
<th>Fuel</th>
<th>MdlYr</th>
<th>Speed (miles/hr)</th>
<th>VMT (miles/day)</th>
<th>ROG_RUNEX (gms/mile)</th>
<th>TOG_RUNEX (gms/mile)</th>
<th>CO_RUNEX (gms/mile)</th>
<th>NOX_RUNEX (gms/mile)</th>
<th>CO2_RUNEX (gms/mile)</th>
<th>PM10_RUNEX (gms/mile)</th>
<th>PM2.5_RUNE (gms/mile)</th>
</tr>
</thead>
<tbody>
<tr>
<td>El Dorado County APCD</td>
<td>2015</td>
<td>Summer</td>
<td>T7 tractor construction</td>
<td>DSL</td>
<td>2012</td>
<td>5</td>
<td>0.080660226</td>
<td>2.484901528</td>
<td>2.828871691</td>
<td>4.943122468</td>
<td>5.785701879</td>
<td>3965.47011</td>
<td>3866.33382</td>
<td>0.071744149</td>
</tr>
</tbody>
</table>
## Appendix 3.4 Table 8
### Construction Equipment Speed
#### Heavenly Mountain Resort Epic Discovery Project

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Average Vehicle Speed(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRUCK WATER 3600-4000G F-H SPR BAR / MONITOR 2AX D</td>
<td>5</td>
</tr>
<tr>
<td>TRAIL DOZER</td>
<td>1.5</td>
</tr>
<tr>
<td>MINI-EXCAVATOR</td>
<td>0.5</td>
</tr>
<tr>
<td>BACKHOE</td>
<td>0.5</td>
</tr>
<tr>
<td>FORKLIFT</td>
<td>2.0</td>
</tr>
<tr>
<td>BOOM TRUCK WITH CRANE</td>
<td>1.5</td>
</tr>
<tr>
<td>WHEELED LOADER</td>
<td>2.0</td>
</tr>
<tr>
<td>DRILL RIG</td>
<td>1.0</td>
</tr>
<tr>
<td>ATVs</td>
<td>7.5 (2)</td>
</tr>
</tbody>
</table>

1) Estimated
2) Assume overall average speed is half the construction area speed limit of 15 mph imposed to help control fugitive dust generation.
### Onsite Fugitive Dust Emission Factors

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Units</th>
<th>Uncontrolled PM$_{2.5}$ Emission Factor (lbs/unit)</th>
<th>Uncontrolled PM$_{10}$ Emission Factor (lbs/unit)</th>
<th>Control Factor$^{(1)}$ (lbs/unit)</th>
<th>Controlled PM$_{2.5}$ Emission Factor (lbs/unit)</th>
<th>Controlled PM$_{10}$ Emission Factor (lbs/unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PICKUP 3/4 TON 4X4 CREW CAB</td>
<td>VMT</td>
<td>0.098</td>
<td>0.98</td>
<td>96.8%</td>
<td>0.0031</td>
<td>0.031</td>
</tr>
<tr>
<td>Mountain Tour F-350 Truck</td>
<td>VMT</td>
<td>0.115</td>
<td>1.15</td>
<td>96.8%</td>
<td>0.0037</td>
<td>0.037</td>
</tr>
<tr>
<td>TRAIL DOZER</td>
<td>HR</td>
<td>0.41</td>
<td>0.75</td>
<td>96.8%</td>
<td>0.013</td>
<td>0.024</td>
</tr>
<tr>
<td>MINI-EXCAVATOR</td>
<td>VMT</td>
<td>0.27</td>
<td>2.69</td>
<td>96.8%</td>
<td>0.0087</td>
<td>0.087</td>
</tr>
<tr>
<td>BACKHOE</td>
<td>VMT</td>
<td>0.13</td>
<td>1.33</td>
<td>96.8%</td>
<td>0.0043</td>
<td>0.043</td>
</tr>
<tr>
<td>FORKLIFT</td>
<td>VMT</td>
<td>0.14</td>
<td>1.42</td>
<td>96.8%</td>
<td>0.0046</td>
<td>0.046</td>
</tr>
<tr>
<td>BOOM TRUCK WITH CRANE</td>
<td>VMT</td>
<td>0.25</td>
<td>2.47</td>
<td>96.8%</td>
<td>0.0079</td>
<td>0.079</td>
</tr>
<tr>
<td>WHEELED LOADER</td>
<td>VMT</td>
<td>0.27</td>
<td>2.69</td>
<td>96.8%</td>
<td>0.0087</td>
<td>0.087</td>
</tr>
<tr>
<td>DRILL RIG</td>
<td>VMT</td>
<td>0.24</td>
<td>2.37</td>
<td>96.8%</td>
<td>0.0076</td>
<td>0.076</td>
</tr>
<tr>
<td>ATVs</td>
<td>VMT</td>
<td>0.052</td>
<td>0.52</td>
<td>96.8%</td>
<td>0.0017</td>
<td>0.017</td>
</tr>
</tbody>
</table>

$^{(1)}$ Derived in Worksheet "DustEmissionFactorDerivations".