

5.0 ERRATA AND OTHER CHANGES TO THE DRAFT EIS

The errata section of this Final EIS illustrates the BLM's revisions to the Draft EIS. The revisions have been developed from either comments received or BLM's internal review of the Draft EIS. The following sections incorporate both deletions and additions to the text of the Draft EIS and are intended to replace the equivalent sections of the Draft EIS.

EXECUTIVE SUMMARY

Page ES-20, Section ES.5

Long-term, moderate cumulative air quality impacts could potentially occur from combined operation of the mining alternatives **and other foreseeable projects**, ~~Southern Nevada Regional Heliport, the I-15 Corridor, and Southern Nevada Supplemental Airport Projects.~~ Plane and helicopter emissions, along with **For instance**, emissions from increased highway traffic **and construction activities** in the project vicinity, could combine with mining operation emissions to create undesirable pollutant levels for nearby sensitive receptors; however, the implementation of operational mitigation measures would, overall, reduce long-term air impacts.

5.1 INTRODUCTION

Page 1-2, Figure 1.0-1

See revised Figure 1.0-1 in Appendix F of this Final EIS. Changed the designation of Clark County Department of Aviation facilities from "Private" to "Airport" at the request of the Clark County Department of Aviation.

5.2 DESCRIPTION OF THE ALTERNATIVES

Page 2-7, Section 2.1.1.3 Aggregate Materials Mining

If local rock instability is discovered during mining operations, ~~a pit slope of 1 to 1 would be used in that area~~ **the slope would be modified to an angle that would stabilize the slope as much as possible**. All benches would have slight grades to facilitate water runoff. The proposed final bottom elevation of the North Site mine would be 2,500 feet.

**Table 2.8-1
Comparison of Long-term Impacts from Each of the Alternatives**

Resource	Alternative 1 (Two Independent Mineral Material Sales)	Alternative 2 (Sale of North Site Only)	Alternative 3 (Sale of South Site Only)	Alternative 4 (Single Sale of North Site and South Site)	Alternative 5 (No Action)
Surface Disturbance (a cres)	341	221	127	286	0.0
Tons of Aggregate Mined (millions)	200	126	74	178	0
Air Quality	<p>Mining would result in moderate, localized impacts to local air quality from increased fugitive dust, volatile organic compounds and nitrogen oxides.</p> <p>Construction emissions of nitrogen oxides (NOx) would exceed the State Implementation Plan (SIP) emission budget and would impede the ability to bring the project area into compliance with the NAAQS for ozone and does not conform to the Clark County Regional Transportation Plan</p>	<p>Mining would result in moderate, localized impacts to local air quality from increased fugitive dust, volatile organic compounds and nitrogen oxides.</p> <p>Construction emissions of NOx would exceed the SIP emission budget and would impede the ability to bring the project area into compliance with the NAAQS for ozone and does not conform to the Clark County RTP or the SIP.</p> <p>Impacts would be minor as measured at nearby residential communities.</p>	<p>Mining would result in moderate, localized impacts to local air quality from increased fugitive dust, volatile organic compounds and nitrogen oxides.</p> <p>Construction emissions of NOx would exceed the SIP emission budget and would impede the ability to bring the project area into compliance with the NAAQS for ozone and does not conform to the Clark County RTP or the SIP.</p> <p>Impacts would be minor as measured at nearby residential communities.</p>	<p>Mining would result in moderate, localized impacts to local air quality from increased fugitive dust, volatile organic compounds and nitrogen oxides.</p> <p>Construction emissions of NOx would exceed the SIP emission budget and would impede the ability to bring the project area into compliance with the NAAQS for ozone and does not conform to the Clark County RTP or the SIP.</p> <p>Impacts would be minor as measured at nearby residential communities.</p>	<p>No long-term impacts would occur in the Sloan Hills area.</p>

**Table 2.8-1
Comparison of Long-term Impacts from Each of the Alternatives**

Resource	Alternative 1 (Two Independent Mineral Material Sales)	Alternative 2 (Sale of North Site Only)	Alternative 3 (Sale of South Site Only)	Alternative 4 (Single Sale of North Site and South Site)	Alternative 5 (No Action)
	<p>(RTP) or the SIP.</p> <p>Impacts would be moderate as measured at nearby residential communities.</p> <p>Mining operations would not cause an exceedance of air quality standards.</p>	<p>Mining operations would not cause an exceedance of air quality standards.</p>	<p>Mining operations would not cause an exceedance of air quality standards.</p>	<p>Mining operations would not cause an exceedance of air quality standards.</p>	
Earth Resources	<p>Mining would permanently alter the topography on approximately 205 acres.</p> <p>Mining would have minor long-term impacts to soils on approximately 346 acres.</p>	<p>Mining would permanently alter the topography on approximately 143 acres.</p> <p>Mining would have minor long-term impacts to soils on approximately 224 acres.</p>	<p>Mining would permanently alter the topography on approximately 63 acres.</p> <p>There would be minor long-term impacts to soils on approximately 129 acres.</p>	<p>Mining would permanently alter the topography on approximately 205 acres.</p> <p>There would be minor long-term impacts to soils on approximately 289 acres.</p>	<p>No long-term impacts would occur in the Sloan Hills area. Mineral materials may be obtained from an alternative location.</p> <p>High-grade construction aggregate would not be produced within an area that is projected to have high population growth over the next 30 years.</p>

**Table 2.8-1
Comparison of Long-term Impacts from Each of the Alternatives**

Resource	Alternative 1 (Two Independent Mineral Material Sales)	Alternative 2 (Sale of North Site Only)	Alternative 3 (Sale of South Site Only)	Alternative 4 (Single Sale of North Site and South Site)	Alternative 5 (No Action)
Biological Resources	<p>Mining would permanently remove approximately 205 acres of vegetation and wildlife habitat.</p> <p>Noxious weeds could be introduced to the area, become established, and spread.</p> <p>Mining would result in the long-term exclusion of terrestrial wildlife from approximately 640 acres of habitat.</p>	<p>Mining would permanently remove approximately 143 acres of vegetation and wildlife habitat.</p> <p>Noxious weeds could be introduced to the area, become established, and spread.</p> <p>Mining would result in the long-term exclusion of terrestrial wildlife from approximately 640 acres of habitat.</p>	<p>Mining would permanently remove approximately 63 acres of vegetation and wildlife habitat.</p> <p>Noxious weeds could be introduced to the area, become established, and spread.</p> <p>Mining would result in the long-term exclusion of terrestrial wildlife from approximately 640 acres of habitat.</p>	<p>Mining would permanently remove approximately 205 acres of vegetation and wildlife habitat.</p> <p>Noxious weeds could be introduced to the area, become established, and spread.</p> <p>Mining would result in the long-term exclusion of terrestrial wildlife from approximately 640 acres of habitat.</p>	<p>No long-term impacts would occur.</p>

**Table 2.8-1
Comparison of Long-term Impacts from Each of the Alternatives**

Resource	Alternative 1 (Two Independent Mineral Material Sales)	Alternative 2 (Sale of North Site Only)	Alternative 3 (Sale of South Site Only)	Alternative 4 (Single Sale of North Site and South Site)	Alternative 5 (No Action)
Water Resources	<p>Mining would alter natural drainage patterns.</p> <p>Mining operations would require up to 225 AFY of water.</p> <p>Groundwater pumping and changes in the point of diversion could lead to a localized increase in the depth to groundwater.</p> <p>Groundwater pumping for dust suppression could have temporary (1 year) localized adverse effects on the groundwater table during site preparation activities.</p>	<p>Mining would alter natural drainage patterns.</p> <p>Mining operations would require up to 112.5 AFY of water.</p> <p>Groundwater pumping and changes in point of diversion could lead to a localized increase in the depth to groundwater.</p> <p>Groundwater pumping for dust suppression could have temporary (1 year) localized adverse effects on the groundwater table during site preparation activities.</p>	<p>Mining would alter natural drainage patterns.</p> <p>Mining operations would require up to 112.5 AFY of water.</p> <p>Groundwater pumping and changes in the point of diversion could lead to a localized increase in the depth to groundwater.</p> <p>Groundwater pumping for dust suppression could have temporary (1 year) localized adverse effects on the groundwater table during site preparation activities.</p>	<p>Mining would alter natural drainage patterns.</p> <p>Mining operations would require up to 225 AFY of water.</p> <p>Groundwater pumping and changes in the point of diversion could lead to a localized increase in the depth to groundwater.</p> <p>Groundwater pumping for dust suppression could have temporary (1 year) localized adverse effects on the groundwater table during site preparation activities.</p>	<p>No impacts would occur in the Sloan Hills area. Mineral materials may be obtained from an alternative location.</p>

**Table 2.8-1
Comparison of Long-term Impacts from Each of the Alternatives**

Resource	Alternative 1 (Two Independent Mineral Material Sales)	Alternative 2 (Sale of North Site Only)	Alternative 3 (Sale of South Site Only)	Alternative 4 (Single Sale of North Site and South Site)	Alternative 5 (No Action)
Cultural Resources	Mining operations would impact four cultural resources. These resources are not eligible for listing on the National Register of Historic Places	Mining operations would impact two cultural resources. These resources are not eligible for listing on the National Register of Historic Places	Mining operations would impact two cultural resources. These resources are not eligible for listing on the National Register of Historic Places	Mining operations would impact four cultural resources. These resources are not eligible for listing on the National Register of Historic Places	No impacts on cultural resources would occur in the Sloan Hills area.
Native American Resources	No impacts.	No impacts.	No impacts.	No impacts.	No impacts.
Land Use	<p>Increased noise, fugitive dust, and changes to the visual character of the Proposed Action area may decrease the attractiveness of the area for development and create land use conflicts.</p> <p>The Las Vegas Boulevard right-of-way would be modified to include an additional turn lane.</p> <p>The Los Angeles/Salt Lake Railroad right-of-way would be crossed two times by the access road/utilities.</p>	<p>Increased noise, fugitive dust, and changes to the visual character of the Proposed Action area may decrease the attractiveness of the area for development and create land use conflicts.</p> <p>The Las Vegas Boulevard right-of-way would be modified to include an additional turn lane.</p> <p>The Los Angeles/Salt Lake Railroad right-of-way would be crossed one time by the access road/utilities.</p>	<p>Increased noise and fugitive dust from the Proposed Action may decrease the attractiveness of the area for development and create land use conflicts.</p> <p>The Las Vegas Boulevard right-of-way would be modified to include an additional turn lane.</p> <p>The Los Angeles/Salt Lake Railroad right-of-way would be crossed one time by the access road/utilities.</p>	<p>Increased noise, fugitive dust, and changes to the visual character of the Proposed Action area may decrease the attractiveness of the area for development and create land use conflicts.</p> <p>The Las Vegas Boulevard right-of-way would be modified to include an additional turn lane.</p> <p>The Los Angeles/Salt Lake Railroad right-of-way would be crossed one time by the access road/utilities</p>	No impacts.

**Table 2.8-1
Comparison of Long-term Impacts from Each of the Alternatives**

Resource	Alternative 1 (Two Independent Mineral Material Sales)	Alternative 2 (Sale of North Site Only)	Alternative 3 (Sale of South Site Only)	Alternative 4 (Single Sale of North Site and South Site)	Alternative 5 (No Action)
Visual Resources	Mining would introduce a strong degree of contrast and a significant change in the landform/water characteristic and would not meet Visual Resource Management objectives at Key Observation Point 2. Effects at Key Observation Points 1 and 3 would be weak and moderate, respectively.	Mining would introduce a strong degree of contrast and a significant change in the landform/water characteristic and would not meet Visual Resource Management objectives at Key Observation Point 2. Effects at Key Observation Points 1 and 3 would be weak and moderate, respectively.	Impacts would be less than significant and would be consistent with Visual Resource Management objectives.	Mining would introduce a strong degree of contrast and a significant change in the landform/water characteristic and would not meet Visual Resource Management objectives at Key Observation Point 2. Effects at Key Observation Points 1 and 3 would be weak and moderate, respectively.	No impacts.
Noise and Vibration	Mining would cause moderate to imperceptible long-term noise and vibration impacts that would be less than significant.	Mining would cause moderate to imperceptible long-term noise and vibration impacts that would be less than significant.	Mining would cause moderate to imperceptible long-term noise and vibration impacts that would be less than significant.	Mining would cause moderate to imperceptible long-term noise and vibration impacts that would be less than significant.	No impacts.

**Table 2.8-1
Comparison of Long-term Impacts from Each of the Alternatives**

Resource	Alternative 1 (Two Independent Mineral Material Sales)	Alternative 2 (Sale of North Site Only)	Alternative 3 (Sale of South Site Only)	Alternative 4 (Single Sale of North Site and South Site)	Alternative 5 (No Action)
Transportation and Traffic	<p>An estimated 1,204 trips to and from the site would occur each day.</p> <p>Trips would have minimal impacts on traffic conditions, and all roadways would continue to operate at acceptable levels of service.</p> <p>Trips would accelerate structural deterioration of roads and reduce pavement lifespan.</p>	<p>An estimated 602 trips to and from the site would occur each day.</p> <p>Trips would have minimal impacts on traffic conditions, and all roadways would continue to operate at acceptable levels of service.</p> <p>Trips would accelerate structural deterioration of roads and reduce pavement lifespan. Impacts to roads would be half of that of Alternative 1.</p>	<p>An estimated 602 trips to and from the site would occur each day.</p> <p>Trips would have minimal impacts on traffic conditions, and all roadways would continue to operate at acceptable levels of service.</p> <p>Trips would accelerate structural deterioration of roads and reduce pavement lifespan. Impacts to roads would be half of that of Alternative 1.</p>	<p>An estimated 842 trips to and from the site would occur each day.</p> <p>Trips would have minimal impacts on traffic conditions, and all roadways would continue to operate at acceptable levels of service.</p> <p>Trips would accelerate structural deterioration of roads and reduce pavement lifespan. Impacts to roads would be 70 percent of that of Alternative 1.</p>	<p>Mineral materials may be mined from an alternate location that would be located further away from areas where the material will be used. This may result in an increase in traffic on major roadways.</p>

**Table 2.8-1
Comparison of Long-term Impacts from Each of the Alternatives**

Resource	Alternative 1 (Two Independent Mineral Material Sales)	Alternative 2 (Sale of North Site Only)	Alternative 3 (Sale of South Site Only)	Alternative 4 (Single Sale of North Site and South Site)	Alternative 5 (No Action)
Socioeconomics	<p>The Proposed Action would have no significant impacts on employment and the economy; or population; housing; and property valuation and taxation.</p> <p>The BLM has a limited understanding of the effects that the construction and operation of open pit mines would have on nearby property values due to a limited amount of available data.</p>	<p>The Proposed Action would have no significant impacts on employment and the economy; or population; housing; and property valuation and taxation.</p> <p>The BLM has a limited understanding of the effects that the construction and operation of an open pit mine would have on nearby property values due to a limited amount of available data.</p>	<p>The Proposed Action would have no significant impacts on employment and the economy; or population; housing; and property valuation and taxation.</p> <p>The BLM has a limited understanding of the effects that the construction and operation of an open pit mine would have on nearby property values due to a limited amount of available data.</p>	<p>The Proposed Action would have no significant impacts on employment and the economy; or population; housing; and property valuation and taxation.</p> <p>The BLM has a limited understanding of the effects that the construction and operation of open pit mines would have on nearby property values due to a limited amount of available data.</p>	<p>Between 20 and 50 long-term jobs would not be created in the southern Las Vegas valley. Up to \$40 million dollars would not be deposited in the Federal General Treasury fund and \$8 million would not be deposited into the State General Treasury.</p>

**Table 2.8-1
Comparison of Long-term Impacts from Each of the Alternatives**

Resource	Alternative 1 (Two Independent Mineral Material Sales)	Alternative 2 (Sale of North Site Only)	Alternative 3 (Sale of South Site Only)	Alternative 4 (Single Sale of North Site and South Site)	Alternative 5 (No Action)
Special Management Areas	<p>Increased levels of fugitive dust, noise, and visual impacts would occur at the Sloan NCA, Sloan Rock Art ACEC, and Jean Lake/Roach Special Recreation Management Area (SRMA).</p> <p>Mining would remove 640 acres from the Jean Lake/Roach SRMA that was available for dispersed recreation.</p> <p>Increased levels of fugitive dust, noise, and visual impacts would affect wilderness characteristics and decrease outstanding opportunities for solitude.</p>	<p>Increased levels of fugitive dust, noise, and visual impacts would occur at the Sloan NCA, Sloan Rock Art ACEC, and Jean Lake/Roach SRMA.</p> <p>Mining would remove 320 acres from the Jean Lake/Roach SRMA that was available for dispersed recreation.</p> <p>Increased levels of fugitive dust, noise, and visual impacts would affect wilderness characteristics and decrease outstanding opportunities for solitude.</p>	<p>Increased levels of fugitive dust, noise, and visual impacts would occur at the Sloan NCA, Sloan Rock Art ACEC, and Jean Lake/Roach SRMA.</p> <p>Mining would remove 320 acres from the Jean Lake/Roach SRMA that was available for dispersed recreation.</p> <p>Increased levels of fugitive dust, noise, and visual impacts would affect wilderness characteristics and decrease outstanding opportunities for solitude.</p>	<p>Increased levels of fugitive dust, noise, and visual impacts would occur at the Sloan NCA, Sloan Rock Art ACEC, and Jean Lake/Roach SRMA.</p> <p>Mining would remove 640 acres from the Jean Lake/Roach SRMA that was available for dispersed recreation.</p> <p>Increased levels of fugitive dust, noise, and visual impacts would affect wilderness characteristics and decrease outstanding opportunities for solitude.</p>	No impacts.

**Table 2.8-1
Comparison of Long-term Impacts from Each of the Alternatives**

Resource	Alternative 1 (Two Independent Mineral Material Sales)	Alternative 2 (Sale of North Site Only)	Alternative 3 (Sale of South Site Only)	Alternative 4 (Single Sale of North Site and South Site)	Alternative 5 (No Action)
Recreation	<p>The Proposed Action would remove 640 acres that were available for dispersed recreation.</p> <p>Increased levels of fugitive dust, noise, and visual impacts would affect the character and rural, undeveloped feel of the surrounding area.</p>	<p>The Proposed Action would remove 320 acres that were available for dispersed recreation.</p> <p>Increased levels of fugitive dust, noise, and visual impacts would affect the character and rural, undeveloped feel of the surrounding area.</p>	<p>The Proposed Action would remove 320 acres that were available for dispersed recreation.</p> <p>Increased levels of fugitive dust, noise, and visual impacts would affect the character and rural, undeveloped feel of the surrounding area.</p>	<p>The Proposed Action would remove 640 acres that were available for dispersed recreation.</p> <p>Increased levels of fugitive dust, noise, and visual impacts would affect the character and rural, undeveloped feel of the surrounding area.</p>	No impacts.

Page 2-57, Figure 2.7-1

See revised Figure 2.7-1 in Appendix F of this Final EIS. Changed the designation of Clark County Department of Aviation facilities from "Private" to "Airport" at the request of the Clark County Department of Aviation.

5.3 EXISTING ENVIRONMENT

Page 3-7, Section 3.1.4 Local Air Quality

Areas that meet the ambient air quality standards are classified as “attainment” areas, while areas that do not meet these standards are classified as “non-attainment” areas. The severity of the classifications for non-attainment ranges in magnitude from marginal to moderate, serious, severe, and extreme. An area that can show two consecutive years of no more than one exceedance per year of the standard can, upon submittal of a plan to demonstrate how the area plans to remain in attainment, petition for redesignation as an attainment area. An area that has been reclassified from non-attainment to attainment is designated as a maintenance area until it demonstrates that it has maintained the standards for at least 10 years. The state and federal attainment status for the Clark County DAQ is summarized in Table 3.1-3. The EPA Green Book reports that the Las Vegas valley is currently in attainment for all criteria pollutants with the exception of PM_{10} and ozone. ~~Although the EPA has issued a finding of attainment for carbon monoxide, the maintenance plan and redesignation is still awaiting approval and therefore remains in serious non-attainment for the 8-hour carbon monoxide standard. PM_{10} currently exceeds standards and Las Vegas valley was classified as a serious non-attainment area for PM_{10} and a non-attainment area for ozone.~~ **The EPA has issued a finding of attainment for CO with an approved maintenance plan. Although the EPA has issued a finding of attainment for PM_{10} , the maintenance plan and re-designation is still awaiting approval and therefore remains in serious non-attainment.**

**Table 3.1-3
Attainment Status for Clark County (Hydrographic Area 212)**

Pollutant	Federal
Carbon monoxide	Serious non-attainment Attainment (maintenance)
Lead	Attainment
Nitrogen dioxide	Attainment
PM ₁₀	Serious non-attainment
PM _{2.5}	Attainment
Ozone*	Non-attainment
Sulfur dioxide	Attainment

Source: EPA, 2009a **Clark County DAQ, 2012**

* ~~In 2007, the non-attainment status was revoked by court action; however, based on existing standards, it is anticipated that a designation of non-attainment will be designated for ground-level ozone in 2010.~~

EPA made the determination that Clark County is in attainment with the 1997 Ozone NAAQS on March 29, 2011. EPA will redesignate the area to attainment upon approval of the Ozone Redesignation Request and Maintenance Plan submitted to EPA Region IX in April 2011.

Page 3-10, Section 3.1.4 Local Air Quality

**Table 3.1-4
Ambient Air Quality Data and Clark County and Nevada Air Quality Standards¹**

Pollutant	Averaging Time	2009 ² Data	2008 Data	2007 Data	Clark County Standard	NDEP Standard
Carbon monoxide ³	1-hour	3 ppm	3 ppm	4 ppm	40,000 µg/m ³ (35.0 ppm)	40,000 µg/m ³ (35.0 ppm)
	8-hour	2.1 ppm	2.1 ppm	2.8 ppm	10,000 µg/m ³ (9.0 ppm)	10,000 µg/m ³ (9.0 ppm)
Nitrogen dioxide ⁴	1-hour	67	64	63 ppb	No current standard	100 ppb
	Annual Arithmetic mean	15 parts per billion (.015 ppm)	17 parts per billion (.017 ppm)	19 parts per billion (.019 ppm)	100 µg/m ³ (0.053 ppm)	100 µg/m ³ (0.053 ppm)
Ozone ³	1-hour	82 parts per billion (0.082 ppm)	87 parts per billion (0.087 ppm)	92 parts per billion (0.092 ppm)	157 µg/m ³ (0.08 ppm)	157 µg/m ³ (0.08 ppm)
PM ₁₀ ⁵	24-hour	667(330) ⁵ µg/m ³	1373(1159) ⁵ µg/m ³	1009(907) ⁵ µg/m ³	150 µg/m ³	150 µg/m ³
	Annual Arithmetic mean	20 µg/m ³	20 µg/m ³	22 µg/m ³	50 µg/m ³	50 µg/m ³
PM _{2.5} ⁵	24-hour	94(58) ⁽⁵⁾ µg/m ³	188 (169) ⁵ µg/m ³	618(479) ⁵ µg/m ³	No current standard	65 µg/m ³
	Annual Arithmetic mean	7 µg/m ³	7 µg/m ³	8 µg/m ³	No current standard	15 µg/m ³

Sources: Clark County DAQEM, 2009a; State of Nevada, 2009

- 1 The data do not exclude exceptional events.
- 2 2009 data inclusive through 8 a.m. December 16, 2009.
- 3 Carbon monoxide and ozone data obtained from the Orr monitoring station.
- 4 Nitrogen oxides data obtained from the JD Smith monitoring station.
- 5 **First number is average ambient data for Clark County, while the number in parentheses represents** PM₁₀ and PM_{2.5} data obtained from the Green Valley monitoring station (closest station to the project site).
- 6 Second highest value.

Page 3-16, Figure 3.2-1

See revised Figure 3.2-1 in Appendix F of this Final EIS. Removed landing strip from the figure and legend.

Page 3-40, Figure 3.3.-6

See revised Figure 3.3-6 in Appendix F of this Final EIS. Changed the designation of Clark County Department of Aviation facilities from "Private/Clark County" to "Airport" at the request of the Clark County Department of Aviation.

Page 3-42, Figure 3.4-1

See revised Figure 3.4-1 in Appendix F of this Final EIS. Changed the designation of Clark County Department of Aviation facilities from "Private" to "Airport" at the request of the Clark County Department of Aviation.

Page 3-62, Figure 3.7-1

See revised Figure 3.7-1 in Appendix F of this Final EIS. Changed the designation of Clark County Department of Aviation facilities from "Private" to "Airport" at the request of the Clark County Department of Aviation.

Page 3-63, Figure 3.7-2

See revised Figure 3.7-2 in Appendix F of this Final EIS. Changed the designation of Clark County Department of Aviation facilities from "Private" to "Airport" at the request of the Clark County Department of Aviation.

Page 3-70, Figure 3.8-1

See revised Figure 3.8-1 in Appendix F of this Final EIS. Changed the designation of Clark County Department of Aviation facilities from "Private/Clark County" to "Airport" at the request of the Clark County Department of Aviation.

Page 3-71, Figure 3.8-2

See revised Figure 3.8-1 in Appendix F of this Final EIS. Changed the designation of Clark County Department of Aviation facilities from "Private" to "Airport" at the request of the Clark County Department of Aviation.

Page 3-82, Figure 3.10-1

See revised Figure 3.10-1 in Appendix F of this Final EIS. Changed the designation of Clark County Department of Aviation facilities from "Private" to "Airport" at the request of the Clark County Department of Aviation.

Page 3-86, Figure 3.10-2

See revised Figure 3.10-2 in Appendix F of this Final EIS. Changed the designation of Clark County Department of Aviation facilities from "Private" to "Airport" at the request of the Clark County Department of Aviation.

Page 3-92, Figure 3.11-1

See revised Figure 3.11-1 in Appendix F of this Final EIS. Changed the designation of Clark County Department of Aviation facilities from "Private" to "Airport" at the request of the Clark County Department of Aviation.

Page 3-104, Figure 3.12-1

See revised Figure 3.12-1 in Appendix F of this Final EIS. Changed the designation of Clark County Department of Aviation facilities from "Private/Clark County" to "Airport" at the request of the Clark County Department of Aviation.

5.4 ENVIRONMENTAL CONSEQUENCES

Page 4-5, Section 4.1.1 Thresholds of Significance

To determine whether a Proposed Action would cause a significant effect on the environment, the impact of the project must be determined by examining the types and levels of emissions generated and their impacts on factors that affect air quality. ~~To accomplish this determination of significance, the Clark County DAQEM has established air pollution thresholds against which a Proposed Action can be evaluated and assist lead agencies in determining whether the Proposed Action is significant.~~ The Proposed Action area is located in Hydrographic Area 212, which is a non-attainment management area for carbon monoxide, PM₁₀ and ozone, and as such is subject to more restrictive thresholds under the Clean Air Act General Conformity Rule.

The EPA defines *de minimis* levels as the minimum threshold for which a conformity determination must be performed, for various criteria pollutants in various areas. *De minimis* thresholds have been defined on a tons-per-year basis for construction and operations emissions. For the purpose of this analysis, any criteria pollutant that exceeds the *de minimis* thresholds for air quality (Table 4.1-1) will be considered to have a significant impact. ~~The significance *de minimis* thresholds for air quality (Table 4.1-1) have been established on a tons-per-year basis for construction and operations emissions.~~

**Table 4.1-1
De Minimis Levels for Non-attainment Areas (Significance Thresholds)**

Air Pollutant	De Minimis Levels for Non-attainment Areas (tons/year)
PM ₁₀	70
PM _{2.5}	100
Carbon monoxide	100
VOC	100
Nitrogen dioxide	100

Page 4-6, Section 4.1.1 Thresholds of Significance

By definition, a project can be determined to be regionally significant if it represents 10 percent or more of a non-attainment area's emissions inventory for that pollutant. For pollutants where the ambient background concentrations are greater than the AAQS, this 10 percent rule will be applied. Because the annual background concentrations for PM₁₀ and PM_{2.5} are below the state and federal annual average standards (PM₁₀: 50 µg/m³ and PM_{2.5}: 15 µg/m³) but the 24-hour average background concentrations are above the state and federal 24-hour average standards (PM₁₀: 150 µg/m³ and PM_{2.5}: 65 µg/m³), only the 24-hour averaged emissions are compared to the 10 percent rule, or 49.6 µg/m³ for PM₁₀ and 17.6 for PM_{2.5}.

Page 4-19, Section 4.1.4.2 Operational Phase

**Table 4.1-10
Annual Emissions for Alternative 4 2 (tons per year)**

	CO	NO _x Unmit	NO _x Mit	PM ₁₀ Unmit	PM ₁₀ Mit	PM _{2.5} Unmit	PM _{2.5} Mit	VOC
Emissions	36.32	72.8	27.17	538.5	47.51	114.9	10.91	8.9
Conformity Threshold	100	100	100	70	70	100	100	100
Exceed Threshold?	No	No	No	Yes	No	Yes	No	No

Unmit = Unmitigated
Mit = Mitigated

Page 4-29, Section 4.1.9.1 Construction and Operational Mitigation Measures

The following mitigation measures are included to reduce air quality impacts from the Proposed Action. Although in the majority of instances the project itself is below regulatory thresholds, the region itself is in exceedence of several criteria pollutants. This project is located in Clark County and is therefore subject to Clark County air quality regulations. These regulations require construction contractors to

reduce emissions of criteria pollutants during construction activities. Because the nature of mining is similar to construction with the amount of disturbance of earth required, the Clark County regulations for construction are assumed to be carried over to the operational activities of the project as well. Although mitigation measures AQ3 through AQ8 may repeat aspects of AQ2, they are called out as individual measures because they have been incorporated into the modeling for the construction and operational activities of Alternatives 1 through 4 or because they have a high potential to reduce particulate emissions from the project and are required, but cannot be quantified, to show potential reductions. AQ1 applies to the operational activities for Alternative 1 only.

Page 4-33, Section 4.2.1.1.2 Aggregate Material Mining

The USGS ground motion hazard maps indicate that there is a low probability that ground motion presents a hazard at the site. There are no identified geologic conditions that would be intensified by project activities resulting in geologic hazards. The pit walls and waste rock stockpiles would be constructed to conform to regulatory standards to minimize instability. During the progression of the mine pit, benches approximately 45 feet in height would be constructed in the quarry with a production width of approximately 25 feet to safely accommodate loaders and haul trucks. This would result in a slope of approximately 60 degrees from horizontal, which would provide an adequate factor of safety (CEMEX/SRP, 2008). The mine configuration will be subject to geotechnical review. If local rock instability is discovered during mining operations, ~~a pit slope of 1 to 1 would be used in that area~~ **the slope would be modified to an angle that would stabilize the slope as much as possible.** The design of the open pit would take into account the mining companies' knowledge of the rock materials, geotechnical tests, and Mine Safety and Health Administration design standards. As mining occurs, design parameters and assumptions would be tested against actual conditions. Monitoring of the conditions would be accomplished through geological and geotechnical evaluation involving geologic structure mapping and slope stability monitoring and analysis.

Page 4-94, Section 4.8.9 Mitigation Measures

To mitigate impacts of potential glare from lighting to a level that is not significant, the following measures will be incorporated:

- VR5 Prior to issuing a mineral material sales contract, the applicant will submit a lighting plan for review and approval by the BLM. The lighting plan will describe the locations of lighting, the purpose of lighting, the types of lights to be used, **the lumens of lighting**, the hours of operation, and any measures incorporated to reduce glare. The Southern Nevada Regional Heliport will also be given the opportunity to review and comment on the proposed lighting plan.
- VR6 **Utilize consistent lighting mitigation measures that follow "Dark Sky" lighting practices. A lighting plan will include dark sky lighting and other visual resource protection and mitigation.** Full-cutoff lighting will be used at the mine facilities to reduce nighttime light impacts.

VR7 All on site lighting will be situated or shielded in such a manner that the luminaries will not be visible from off site except when needed for safety. **Effective lighting should have screens that do not allow the bulb to shine up or out. All proposed lighting shall be located to avoid light pollution onto any adjacent lands as viewed from a distance. All lighting fixtures shall be hooded and shielded, face downward, located within soffits and directed on to the pertinent site only, and away from adjacent parcels or areas.**

Page 4-110, Figure 4.10-2

See revised Figure 4.10-2 in Appendix F of this Final EIS. Changed the designation of Clark County Department of Aviation facilities from "Private" to "Airport" at the request of the Clark County Department of Aviation.

Page 4-115, Figure 4.10-3

See revised Figure 4.10-3 in Appendix F of this Final EIS. Changed the designation of Clark County Department of Aviation facilities from "Private" to "Airport" at the request of the Clark County Department of Aviation.

Page 4-127, Section 4.11.2.2 Value of Mineral Materials

**Table 4.11-2
Value of Mineral Material Sales Contracts for Alternative 2**

Contract Interval (years)	Aggregate Material Mined (tons)	Approximate Value of Mined Aggregate (adjusted for inflation) (\$)	Government Value of Contract (\$)		
			Reclamation Fund	General (Federal) Treasury	General (State) Treasury
0-10	25,650,000	392,258,936	19,494,000	5,130,000	1,026,000
10-20	50,000,000	1,130,984,399	38,000,000	10,000,000	2,000,000
20-30	50,000,000	1,764,968,655	38,000,000	10,000,000	2,000,000
Total	376,950,000 125,650,000	9,864,635,970 3,288,211,990	286,482,000 95,494,000	75,390,000 25,130,000	15,078,000 5,026,000

Page 4-128, Section 4.11.3.2 Value of Mineral Materials

**Table 4.11-3
Value of Mineral Material Sales Contracts for Alternative 3**

Contract Interval (years)	Aggregate Material Mined (tons)	Approximate Value of Mined Aggregate (adjusted for inflation) (\$)	Government Value of Contract (\$)		
			Reclamation Fund	General (Federal) Treasury	General (State) Treasury
0–10 years	24,000,000	377,459,741	18,240,000	4,800,000	960,000
10–20 years	50,000,000	1,130,984,399	38,000,000	10,000,000	2,000,000
Total	74,000,000	4,525,332,420 1,508,444,140	56,240,000	14,800,000	2,960,000

5.5 CUMULATIVE IMPACTS

Page 5-2, Section 5.2 Past, Present, and Reasonably Foreseeable Future Actions

**Table 5.2-1
Surface Disturbance of Past, Present, and Reasonably Foreseeable Future Actions**

Project	Surface Disturbance (acres)	Estimated Construction Duration (years)*	Surface Disturbance (acres per year)
Past			
BLM Las Vegas RMP Revision	N/A	N/A	N/A
Acciona Solar One Power Plant	400	N/A	N/A
Clark County MSHCP	7,334	N/A	N/A
Clark County Regional Flood Control Projects	1,508	N/A	N/A
Clark County Shooting Park	2,925	N/A	N/A
Frehner Construction Sloan Quarry	38	N/A	N/A
Fotowatio Apex Solar Power Project	84	N/A	N/A
Henderson Open Space and Trails Plan	52	N/A	N/A
I-215 Improvement Projects–Northern Beltway	1,065	N/A	N/A
I-215 Improvement Projects–Western Beltway	373	N/A	N/A
Lone Mountain Community Pit	28	N/A	N/A

**Table 5.2-1
Surface Disturbance of Past, Present, and Reasonably Foreseeable Future Actions**

Project	Surface Disturbance (acres)	Estimated Construction Duration (years)*	Surface Disturbance (acres per year)
M Resort and Casino	90	N/A	N/A
Nellis Dunes Off-Road Park	1,211	N/A	N/A
Sloan Canyon NCA RMP and North McCullough Wilderness Management Plan	N/A	N/A	N/A
Temporary Rock Crushing Operation	32	N/A	N/A
U.S. Army Reserve Training Facility, Sloan, Clark County, Nevada	34	N/A	N/A
Past Total	15,174	—	—
Present			
BLM Las Vegas RMP Implementation	N/A	NA	N/A
Clark County Regional Flood Control Projects	125	1.5	83.3
Fotowatio Apex Solar Power Project	85	1	85
Frehner Construction Sloan Quarry	25	1.5	16.7
Henderson Open Space and Trails Plan	50	1.5	33.3
I-15 Sloan Interchange	25	3	8.3
I-15 Widening from Sloan to SR 160	45	3	15
I-215 Improvement Projects–Northern Beltway	408	1.5	272
I-215 Improvement Projects–Southern Beltway	223	1.5	148.7
Las Vegas Boulevard Widening from Sloan to Blue Diamond	47	3	15.7
Lone Mountain Community Pit	28	1.5	18.7
Nevada Army National Guard Readiness Center	7	1.5	4.7
Nextlight Renewable Power, LLC, Silver State Solar Project Phase I	2,967	3	989
Sloan Canyon NCA RMP and North McCullough Wilderness Management Plan Implementation	N/A	N/A	N/A
Southern Nevada Regional Heliport	229	6	38

**Table 5.2-1
Surface Disturbance of Past, Present, and Reasonably Foreseeable Future Actions**

Project	Surface Disturbance (acres)	Estimated Construction Duration (years)*	Surface Disturbance (acres per year)
Temporary Rock Crushing Operation	32	2	16
U.S. Army Reserve Training Facility, Sloan, Clark County, Nevada	45	1.5	30
Upper Las Vegas Wash Conservation Transfer Area Implementation	N/A	N/A	N/A
Present Total	4,341 4,112	—	—
Future			
BLM Las Vegas RMP Implementation	Unknown	Unknown	Unknown
Clark County MSHCP Amendment Implementation	215,000	50	4,300
Clark County Regional Flood Control Projects	1,012	30	33.73
Desert Xpress Rail Line	404	2	202
Duke Energy, Searchlight Wind Project	24,400	3	8,133
Frehner Construction Sloan Quarry	12	30	0.4
Henderson Open Space and Trails Plan	173	30	5.8
Lone Mountain Community Pit	27	2	13.5
LVVWD Sloan 2745 Zone Reservoir And 3205 Zone South Pumping Station	30	1	30
Moapa Band of Paiutes Solar Project	650	1.5	433.3
Nextlight Renewable Power, LLC, Silver State Solar Project Phases II and III	5,000	1.5	3,333
Sheep Mountain Parkway	290	1	290
Sloan Canyon NCA RMP and North McCullough Wilderness Management Plan Implementation	N/A	N/A	N/A
Southern California Edison Eldorado Ivanpah Transmission Project	344	3	115

**Table 5.2-1
Surface Disturbance of Past, Present, and Reasonably Foreseeable Future Actions**

Project	Surface Disturbance (acres)	Estimated Construction Duration (years)*	Surface Disturbance (acres per year)
Southern Highlands Casino, Resort and Spa	100	1	100
Southern Nevada Regional Heliport	229	6	38
Southern Nevada Supplemental Airport	5,834	2	2,917
Upper Las Vegas Wash Conservation Transfer Area Implementation	N/A	N/A	N/A
Future Total	235,505	—	—
Sloan Hills Competitive Mineral Material Sales			
Alternative 1	341.3	1.5	227.5
Alternative 2	221.2	1.5	147.5
Alternative 3	126.9	1.5	84.6
Alternative 4	286.1	1.5	190.7
No Action Alternative	0	0	0
* The construction timeline of some projects is unknown at this time because these projects are dependent on economic recovery in the Las Vegas valley and market demand.			

Page 5-9, Figure 5.2-2

See revised Figure 5.2-2 in Appendix F of this Final EIS. The Southern Nevada Regional Heliport has been removed from the revised figure.

Page 5-13, Figure 5.2-3

See revised Figure 3.2-1 in Appendix F of this Final EIS. Corrected legend to read "Southern Nevada Supplemental (Ivanpah Valley) Airport".

Page 5-18, Section 5.3.1, Air Quality

Long-term moderate cumulative air quality impacts could potentially occur from the combined operation of the mining alternatives, ~~the Southern Nevada Regional Heliport, and the I-15 projects. Helicopter emissions, combined with~~ **and other foreseeable projects. For Instance,** emissions from increased highway traffic in the project vicinity resulting from the proposed I-15 projects, emissions from the Proposed Action and/or project alternatives and the other past, present, and future projects listed in

Table 5.2-1, would likely result in undesirable pollutant levels for nearby sensitive receptors. The implementation of operational mitigation measures (AQ1 through AQ10, refer to Section 4.1.9) would, overall, reduce long-term air impacts. It should be noted that the Proposed Action and the other projects would be required to comply with the Clark County Air Quality Regulations and the State Implementation Plans. The Air Quality Regulations have been established, in part, to account for potential cumulative effects of multiple construction projects in the Las Vegas valley.

6.0 SUPPLEMENTAL AIR QUALITY ANALYSES

Under Section 176(c)(1) of the Clean Air Act, federal agencies that “engage in, support in any way or provide financial assistance for, license or permit, or approve any activity” must demonstrate that such actions do not interfere with state and local plans to bring an area into attainment with the NAAQS (42 USC Section 7506(c)). The Proposed Action is located within the Las Vegas Valley Hydrographic Basin 212 (air basin), which is classified non-attainment for ozone. The Clark County DAQ is the local agency responsible for the air basin. Air monitoring in the air basin demonstrates that the air basin has been in attainment of the NAAQS for particulate matter of less than 10 microns (PM₁₀) for over 8 years. In August, 2010, Clark County DAQ requested redesignation of the air basin as in attainment for the NAAQS PM₁₀ and drafted a PM₁₀ maintenance plan to keep the air basin in attainment. The EPA determined that the air basin is in attainment for the NAAQS for PM₁₀, but redesignation to attainment is still pending.

An air quality analysis was conducted for the Proposed Action to determine if impacts of the Proposed Action would or would not interfere with the state and local plans to bring the area into attainment with the NAAQS. The analysis made several reasonably foreseeable assumptions to predict air quality consequences of implementing the Proposed Action that included the assumption that on-road truck trips transporting aggregate into the Las Vegas valley would occur with or without the Proposed Action in response to the need for construction material. This assumption was based on the fact that construction within the Las Vegas valley would depend on the transport of aggregate material regardless of whether or not the Proposed Action was approved and implemented. With that assumption, the air quality analysis predicted the Proposed Action’s direct and indirect sources of air pollutants associated with construction and operation at the site including fugitive dust emissions, off-road equipment, and on-road haul trucks on the local roadways accessing the site, but did not look at truck trips on I-15 or other major arterial roadways within the Las Vegas valley.

Clark County DAQ commented on the air quality analysis contained in the Draft EIS and stated that they could not determine if the Proposed Action would interfere with the state and local plans to bring the air basin into attainment because they did not have enough information, including emissions associated with the Proposed Action and haul trucks traveling on the roadways throughout the Las Vegas valley. The BLM met with Clark County DAQ to resolve this issue June 4, 2012. The result of that meeting was for BLM to provide a Clean Air Act General Conformity Analysis that included air pollutant emissions associated with all on-road haul truck activities associated with the Proposed Action. In the meeting, Clark County DAQ staff asked for a comparison of total project generated emissions in combination with emissions from anticipated growth in the region with the transportation emission budgets found in the RTP for the Las Vegas valley rather than a simple comparison of project generated emissions with the *de minimis* thresholds because the Clark County DAQ was concerned that the project may cause an exceedance in the transportation related emission budgets even if the project was below the *de minimis* thresholds. For this reason, this conformity analysis looks at the project generated total direct and indirect emissions, combines the project total with total emissions anticipated from growth in the region found in the RTP for the Las Vegas valley, and compares that combined, cumulative total with the transportation emission budgets found in the RTP.

In addition, BLM agreed to provide an analysis of Hazardous Air Pollutants (HAPs) with a focus on diesel particulate matter (DPM) and climate change analysis with a focus on project generated GHG emissions. This General Conformity Analysis analyzes direct and indirect sources of air pollutants associated with construction and operation at the site including fugitive dust emissions, off-road equipment, and on-road haul trucks on roadways throughout the Las Vegas valley for the pollutants described above.

Finally, revisions in this conformity analysis address and respond to the comments raised in the Clark County DAQ comment letter dated January 3, 2013. Comments in that letter include corrections and details concerning the attainment status of the air basin, emission budgets in the RTP, requesting explanations why the analysis relies upon a conformity analysis and does not look at *de minimis* thresholds, and a request to see the calculations and modeling that went into the values shown in the tables.

6.1 SUMMARY OF ALTERNATIVES ANALYZED IN THIS SUPPLEMENTAL AIR QUALITY ANALYSIS

BLM evaluated a variety of alternatives including the No Action Alternative and a practical range of other “reasonable” action alternatives that would satisfy the applicants’ request for competitive mineral material sale on two parcels of public land administered by the BLM in the Sloan Hills area of southern Nevada in order to determine the environmental consequences of approving/disapproving the application for mineral material sales contracts. This General Conformity Analysis reviews the alternatives with regard to air pollutant emissions. The alternatives and information relevant to air quality are as follows:

6.1.1 Alternative 1 (Two Independent Mineral Material Sales)

Alternative 1 would have two separate mining operations independent of one another. The proposed North Site mine and associated facilities would be located within a 320-acre area in the south 1/2 of Section 29 of Township 23 South, Range 61 East. Once completed the open pit mine would be approximately 143 acres in size. The proposed South Site mine and associated facilities would be located within a 320-acre area adjacent to and directly south of the North Site mine. The following mining and haul truck activities would occur if Alternative 1 is implemented:

- 7,000,000 tons per year of peak production of aggregate material from the North Site and South Site mines.
- 1,562 haul truck trips during peak daily output and 176 trips from employee commutes and other vehicles per day at maximum daily facility activities with an average of 28 miles per vehicle trip to haul aggregate materials from the North and South Site mines to construction sites throughout the Las Vegas valley.

6.1.2 Alternative 2 (Sale of North Site Only)

The proposed North Site mine and associated facilities would be located within a 320-acre area as described in Alternative 1. Once completed the open pit mine would be approximately 143 acres in size. The following mining and haul truck activities would occur if Alternative 2 is implemented:

- 5,000,000 tons per year of peak production of aggregate material from the North Site mine.

- 1,116 haul truck trips during peak daily output and 88 trips from employee commutes and other vehicles per day at maximum daily facility activities with an average of 28 miles per vehicle trip to haul aggregate materials from the North Site mine to construction sites throughout the Las Vegas valley.

6.1.3 Alternative 3 (Sale of South Site Only)

The proposed South Site mine and associated facilities would be located within a 320-acre area as described in Alternative 1. Once completed the open pit mine would be approximately 143 acres in size. The following mining and haul truck activities would occur if Alternative 2 is implemented:

- 5,000,000 tons per year of peak production of aggregate material from the South Site mine
- 1,116 haul truck trips during peak daily output and 88 trips from employee commutes and other vehicles per day at maximum daily facility activities with an average of 28 miles per vehicle trip to haul aggregate materials from the North Site mine to construction sites throughout the Las Vegas valley.

6.1.4 Alternative 4 (Single Sale of North Site and South Site)

Under Alternative 4, the BLM would simultaneously sell the mineral material in the North Site and South Site to a single applicant. The following mining and haul truck activities would occur if Alternative 2 is implemented:

- 7,000,000 tons per year of peak production of aggregate material from the North Site mine
- 1,562 haul truck trips during peak daily output and 123 trips from employee commutes and other vehicles per day at maximum daily facility activities with an average of 28 miles per vehicle trip to haul aggregate materials from the North Site mine to construction sites throughout the Las Vegas valley.

6.1.5 Alternative 5 (No Action Alternative)

Under Alternative 5, the BLM would deny the request for a sale of a mineral materials contract and no mining would occur in the Sloan Hills.

6.1.6 Additional Air Conformity Analysis Assumptions

Note that haul truck trips are at peak maximum daily capacity for each of the alternatives. Peak maximum daily capacity was calculated based on the annual allowed output and annual averages for haul truck trips. This calculation followed the Institute of Transportation Engineers (ITE) Trip Generation (ITE, 2009) guidelines and multiplied two times the daily average trips. One exception was Alternative 1, which was limited by mitigation to 7,000,000 tons per year. In that case the calculation was based on two times the daily average needed to produce the 7,000,000 tons per year limit. The difference between average annual truck trips and peak daily truck trips for each of the alternatives is shown in Table 6.1-1. Table 6.1-1 also summarizes the relevant size of facilities for each of the alternatives.

**Table 6.1- 1
Air Conformity Analysis Assumptions**

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Total Site Acreage	640.00	320.00	320.00	640.00	0.00
Ancillary Facility Sites	2.00	1.00	1.00	1.00	0.00
Ancillary Facility acreage	90.00	45.00	45.00	45.00	0.00
Ancillary Building (sq ft)	80,630.00	40,315.00	40,315.00	40,315.00	0.00
Average daily truck trips	781*	558	558	781*	0
Peak daily truck trips	1,562*	1,116	1,116	1,562*	0

* Limited by the 7,000,000 tons per year limit placed on this alternative by air quality mitigation.

6.2 AIR QUALITY ENVIRONMENT OF THE PROPOSED ACTION AREA

6.2.1 Air Resources

Air quality in a given location is described as the concentration of various pollutants in the atmosphere. Air quality is determined by several factors, including the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. This section describes existing air quality conditions. Topics discussed in this section include climatology, air resource management, NAAQS, and local air quality of the Sloan Hills area.

6.2.2 Climatology

The Sloan Hills area is located in the southwestern desert region of Nevada, and the northeastern portion of the Mojave Desert. Southern Nevada's climate is dry throughout the year, with long, hot summers and short, mild winters. This region experiences typical low desert conditions; winters are mild with temperatures ranging from freezing to 75 degrees Fahrenheit (°F) and summers are extremely hot with highs that usually exceed 100°F and may reach 120°F. Precipitation in and around the area is spread fairly uniformly throughout the year with maximum precipitation occurring January through March. The mean annual total precipitation in the vicinity of the project area is approximately 3.0 to 6.0 inches (Clark County Regional Flood Control District, 2009); however, annual precipitation can vary greatly from year to year, ranging from 0.0 to 10.0 inches.

During the winter, precipitation is primarily associated with storms moving eastward from the Pacific Ocean. Snow accumulation is rare in the lower desert region. Flurries are observed once or twice during most winters, but snowfall of 1 inch or more occurs only once every four to five years.

During the summer, precipitation is associated with storms that move south-southeast from the Pacific Ocean and north-northwest from the Gulf of Mexico. Over several weeks during the summer, warm, moist air predominates within the area and causes scattered, occasionally severe thunderstorms. The climate in the area is dry and hot in the summer and cool in the winter. The summer heat is accompanied by extremely low relative humidity.

Strong winds can occur during the spring and fall seasons. Winds stronger than 50 miles per hour (mph) are infrequent but can occur with some of the more vigorous storms. Winter and spring wind events often generate widespread areas of blowing dust and sand. Strong wind episodes in the summertime are usually connected with thunderstorms, and are thus more isolated and localized. Surface winds are characterized by prevailing southwesterly winds with an average speed of approximately 10 miles per hour.

6.2.3 Local Air Quality

Areas that meet the ambient air quality standards are classified as "attainment" areas while areas that do not meet these standards are classified as "non-attainment" areas. An area that has been reclassified from non-attainment to attainment is designated as a maintenance area until it demonstrates that it has maintained the standards for at least 10 years. The attainment status for the Clark County DAQ is summarized in Table 6.2-1. The EPA Green Book reports that the Las Vegas valley is presently in attainment for all criteria pollutants with the exception of ozone. The EPA has issued a finding of attainment for CO with an approved maintenance plan. Although the EPA has issued a finding of attainment for PM₁₀, the maintenance plan and re-designation is still awaiting approval and therefore remains in serious non-attainment. The project area is designated as a non-attainment area for ozone.

**Table 6.2- 1
Attainment Status for Clark County (Hydrographic Area 212)**

Pollutant	Federal
Carbon Monoxide	Attainment (maintenance)
Lead	Attainment
Nitrogen Dioxide	Attainment
Particulate Matter (PM ₁₀)	Non-attainment Serious
Particulate Matter (PM _{2.5})	Attainment
Ozone	Non-attainment
Sulfur Dioxide	Attainment

Source: EPA, Green Book (July 2012), <http://www.epa.gov/airoaqs/greenbk/anc12.html> accessed November 2012.

Ozone is formed through a photo-chemical process where NO_x bond with various VOCs to form ozone in the presence of sunlight. For this reason NO_x and VOCs are classified as ozone precursor pollutants and are valuable in planning for attainment status of the ozone NAAQS. A General Conformity Analysis

needs to demonstrate that approval of a project does not interfere with the state and local plans to bring the area into attainment. The primary local planning documents used to bring the area into attainment are the Clark County Transportation Conformity Plan (January 2008), and the RTC RTP (RTP, 2008). The air quality planning in these documents become the basis for the SIP for the State of Nevada and include SIP emission budgets for ozone precursor pollutants (NO_x and VOCs), CO, and PM₁₀ within the Las Vegas valley. Total emissions within the valley must adhere to the SIP emission budgets to successfully bring pollutants down to levels that achieve and/or maintain attainment of the NAAQS for all criteria pollutants. Table 6.2-2 shows the SIP emission budgets found in the Air Quality Conformity Tests in Chapter 6 of the RTP.

Table 6.2- 2
SIP Emissions Budgets for the Las Vegas valley to Use in Conformity Tests

Pollutant	Attainment Status	SIP Emissions Budgets (tons/day) RTP Modeled Emission Budgets (tons/day)		
		Year 2013	Year 2020	Year 2030
NO _x (ozone)	Non-attainment	31.85	20.13	17.73
VOCs (ozone)	Non-attainment	39.49	33.97	40.36
PM ₁₀	Non-attainment	141.4	141.4	141.4
CO	Attainment (maintenance)	690	817	817

Note that ozone is not calculated directly. Instead, the calculations are performed for the chemicals that contribute to ozone formation in the lower atmosphere: VOCs and the NO_x. Also note that SIP budgets for ozone precursor emissions are currently being updated. Therefore, the current RTP modeled emissions are compared with a “No-Build” scenario, which represents what might happen if RTP projects were not implemented. The modeled emissions are used to compare whether or not project generated emissions in combination with all other emissions within the valley would exceed the RTP modeled emissions inventory. This comparison will demonstrate whether or not the project has “general conformity” with the RTP and SIP.

For PM₁₀ and CO, project generated emissions in combination with all other emissions within the valley as modeled in the RTP are compared with the SIP Emission Budgets in order to demonstrate whether or not the project has “general conformity” with the RTP and SIP.

Note that the RTP has various “planning years” for 2013, 2020, and 2030 with various emission budgets allowed in each planning year. This was done to show how the Las Vegas valley is able to achieve attainment of the NAAQS for these pollutants as both the population grows within the valley and the RTP is implemented. For this reason, the project needs to demonstrate conformity in all three planning years.

6.3 GENERAL CONFORMITY ANALYSIS OF THE ALTERNATIVES

Under the general conformity regulations, both the direct and indirect emissions associated with a federal action must be evaluated. Subpart W defines direct emissions as:

[T]hose emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and occur at the same time and place as the action. (40 CFR Section 51.852)

Subpart W defines indirect emissions as:

[T]hose emissions of a criteria pollutant or its precursors that:

- (1) Are caused by the Federal action, but may occur later in time and/or may be farther removed in distance from the action itself but are still reasonably foreseeable; and*
- (2) The Federal agency can practicably control and will maintain control over due to a continuing program responsibility of the Federal agency. (40 CFR Section 51.852)*

A conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a federal non-attainment or maintenance area would equal or exceed specified SIP emission budgets shown in Table 6.2-2. As noted in Table 6.2-2, there are three planning years (2013, 2020, and 2030) with SIP emission budgets. Project generated construction emissions for peak construction activities are compared with the SIP emission budgets for planning year 2013. Peak operational emissions are compared with the SIP emission budgets for planning years 2020 and 2030.

6.3.1 Alternative 1 (Two Independent Mineral Material Sales)

6.3.1.1 Construction Phase

Table 6.3-1 shows the impacts from Alternative 1 construction activities. Construction activities would be subject to the terms and conditions of the Clark County DAQ Dust Control regulations, and hence mitigation was applied to the modeling to show a reduction in impacts from dust-generating activities associated with regulatory compliance of the Clark County DAQ Dust Control regulations. Table 6.3-1 shows project generated emissions with and without the Clark County DAQ Dust Control regulations.

**Table 6.3- 1
Construction Period Emissions for Alternative 1 (tons per day)**

	CO	NOx	PM ₁₀ Unmit	PM ₁₀ Mit	VOCs
Evaluation Year	2013				
Project Emissions	0.15	0.35	4.91	1.52	0.04
RTP Modeled Emissions	375.00	31.85	78.60	78.60	39.49
Total Emissions	375.15	32.2	83.51	80.12	39.53
SIP Emission Budgets	690.0	31.9	141.4	141.4	39.5
Exceed SIP Emissions?	No	Yes	No	No	Yes

Unmit = unmitigated; Mit = mitigated

As shown in Table 4.1-1, construction period emissions for NOx and VOCs exceed the SIP Emission budget allocations in the RTP, which means that approval of Alternative 1 would impede the ability to bring the project area into compliance with the NAAQS for ozone and does not conform to the Clark County RTP or the SIP.

6.3.1.2 Operational Phase

The operational phase of Alternative 1 includes both on site emissions associated with the mining and processing of aggregate for sale and off site emissions of haul trucks on the roadways throughout the Las Vegas valley transporting aggregate to the construction sites. Off site emissions are based upon 1,562 trips per day for haul trucks to transport material at an average of 28 miles per trip. There are a total of 43,736 vehicle miles traveled (VMT) by the haul trucks. Calculations of haul truck activities include both exhaust and road dust emissions associated with the VMT. Table 6.3-2 shows the anticipated tons per day of criteria pollutants for Alternative 1, assuming a nine-hour workday for unmitigated and mitigated with exporting a maximum of 7 million tons per year. As shown, with or without the incorporation of mitigation measures MM1 through MM10 (See Section 4.1-4 of the Draft EIS), this alternative is above the SIP emissions budgets for NO_x, and VOCs which means that approval of Alternative 1 would impede the ability to bring the project area into compliance with the NAAQS for ozone and does not conform to the Clark County RTP or the SIP.

**Table 6.3- 2
Operational Emissions for Alternative 1 (tons per day)**

	CO	NOx Unmit	NOx Mit	PM₁₀ Unmit	PM₁₀ Mit	VOCs
Evaluation Year	2020					
Onsite Project Emissions	0.25	0.47	0.18	3.45	0.30	0.06
On-Road Project Emissions	0.53	0.33	0.33	0.10	0.10	0.08
RTP Modeled Emissions	400	20.13	20.1333.97	95.6	95.6	33.97
Total Emissions:	400.78	20.93	20.64	99.15	96.00	34.11
SIP Emission Budgets	817.0	20.2	20.2	141.4	141.4	34.0
Exceed SIP Emissions?	No	Yes	Yes	No	No	Yes
Evaluation Year	2030					
Onsite Project Emissions	0.25	0.47	0.18	3.45	0.30	0.06
On-Road Project Emissions	0.53	0.33	0.33	0.10	0.10	0.08
RTP Modeled Emissions	400	17.73	17.73	110.4	110.4	40.36
Total Emissions:	400.78	18.53	18.24	113.95	110.80	40.5
SIP Emission Budgets	817.0	17.8	17.8	141.4	141.4	40.4
Exceed SIP Emissions?	No	Yes	Yes	No	No	Yes

Unmit = unmitigated; Mit = mitigated

6.3.2 Alternative 2 (Sale of North Site Only)

6.3.2.1 Construction Phase

Table 6.3-3 shows the impacts from Alternative 2 construction activities. As with Alternative 1, construction activities would be subject to the terms and conditions of the Clark County Dust Control regulations, and hence mitigation was applied to the modeling to show a reduction in impacts from dust-generating activities.

**Table 6.3- 3
Construction Period Emissions for Alternative 2 (tons per day)**

	CO	NO_x	PM₁₀ Unmit	PM₁₀ Mit	VOCs
Evaluation Year	2013				
Project Emissions	0.10	0.23	2.51	0.78	0.03
RTP Modeled Emissions	375.00	31.85	78.60	78.60	39.49
Total Emissions	375.10	32.08	81.11	79.38	39.52
SIP Emission Budgets	690.0	31.9	141.4	141.4	39.5
Exceed SIP Emissions?	No	Yes	No	No	Yes

Unmit = unmitigated; Mit = mitigated

As shown in Table 6.3-3, construction period emissions for NO_x and VOCs exceed the SIP Emission budget allocations in the RTP, which means that approval of Alternative 2 would impede the ability to bring the project area into compliance with the NAAQS for ozone and does not conform to the Clark County RTP or the SIP.

6.3.2.2 Operational Phase

The operational phase of Alternative 2 includes both on site emissions associated with the mining and processing of aggregate for sale and off site emissions of haul trucks on the roadways throughout the Las Vegas valley transporting aggregate to the construction sites. Off site emissions are based on 1,116 trips per day for haul trucks to transport material at an average of 28 miles per trip. There are a total of 31,248 VMT by the haul trucks. Calculations of haul truck activities include both exhaust and road dust emissions associated with the VMT. Table 6.3-4 shows the anticipated tons per day of criteria pollutants for Alternative 2, assuming a nine-hour workday for unmitigated and mitigated with exporting a maximum of 5 million tons per year. As shown, with or without the incorporation of mitigation measures MM1 through MM10 (See Section 4.1-4 of the Draft EIS), this alternative is above the SIP emission budgets for NO_x, and VOCs, which means that approval of Alternative 2 would impede the ability to bring the project area into compliance with the NAAQS for ozone and does not conform to the Clark County RTP or the SIP.

**Table 6.3- 4
Operational Emissions for Alternative 2 (tons per day)**

	CO	NOx Unmit	NOx Mit	PM ₁₀ Unmit	PM ₁₀ Mit	VOCs
Evaluation Year	2020					
Onsite Project Emissions	0.12	0.23	0.09	1.72	0.15	0.03
On-Road Project Emissions	0.39	0.24	0.24	0.07	0.07	0.06
RTP Modeled Emissions	400.00	20.13	20.13	95.6	95.6	33.97
Total Emissions:	400.51	20.6	20.46	97.39	95.82	34.06
SIP Emission Budgets	817.0	20.2	20.2	141.4	141.4	34.0
Exceed SIP Emissions?	No	Yes	Yes	No	No	Yes
Evaluation Year	2030					
Onsite Project Emissions	0.12	0.23	0.09	1.72	0.15	0.03
On-Road Project Emissions	0.39	0.24	0.24	0.07	0.07	0.06
RTP Modeled Emissions	400	17.73	17.73	110.4	110.4	40.36
Total Emissions:	400.51	18.2	18.06	112.19	110.84	40.45
SIP Emission Budgets	817	17.8	17.8	141.4	141.4	40.4
Exceed SIP Emissions?	No	Yes	Yes	No	No	Yes

Unmit = unmitigated; Mit = mitigated

6.3.3 Alternative 3 (Sale of South Site Only)

6.3.3.1 Construction Phase

Table 6.3-5 shows the impacts from Alternative 3 construction activities. As with Alternatives 1 and 2, construction activities would be subject to the terms and conditions of the Clark County Dust Control regulations, and hence mitigation was applied to the modeling to show a reduction in impacts from dust-generating activities.

**Table 6.3- 5
Construction Period Emissions for Alternative 3 (tons per day)**

	CO	NOx	PM ₁₀ Unmit	PM ₁₀ Mit	VOCs
Evaluation Year	2013				
Project Emissions	0.10	0.23	2.51	0.78	0.03
RTP Modeled Emissions	375.00	31.85	78.60	78.60	39.49
Total Emissions	375.10	32.08	81.11	79.38	39.52
SIP Emission Budgets	690.0	31.9	141.4	141.4	39.5
Exceed SIP Emissions?	No	Yes	No	No	Yes

Unmit = unmitigated; Mit = mitigated

As shown in Table 6.3-5, construction period emissions for NO_x and VOCs exceed the SIP Emission budget allocations in the RTP, which means that approval of Alternative 3 would impede the ability to bring the project area into compliance with the NAAQS for ozone and does not conform to the Clark County RTP or the SIP.

6.3.3.2 Operational Phase

The operational phase of Alternative 3 includes both on site emissions associated with the mining and processing of aggregate for sale and off site emissions of haul trucks on the roadways throughout the Las Vegas valley transporting aggregate to the construction sites. Off site emissions are based on 1,116 trips per day for haul trucks to transport material at an average of 28 miles per trip. There are a total of 31,248 VMT by the haul trucks. Calculations of haul truck activities include both exhaust and road dust emissions associated with the VMT. Table 6.3-6 shows the anticipated tons per day of criteria pollutants for Alternative 3, assuming a nine-hour workday for unmitigated and mitigated with exporting a maximum of 5 million tons per year. As shown, with or without the incorporation of mitigation measures MM1 through MM10 (See Section 4.1-4 of the Draft EIS), this alternative is above the SIP emission budgets for NO_x, and VOCs, which means that approval of Alternative 3 would impede the ability to bring the project area into compliance with the NAAQS for ozone and does not conform to the Clark County RTP or the SIP.

**Table 6.3- 6
Operational Emissions for Alternative 3 (tons per day)**

	CO	NOx Unmit	NOx Mit	PM₁₀ Unmit	PM₁₀ Mit	VOCs
Evaluation Year	2020					
Onsite Project Emissions	0.12	0.23	0.09	1.72	0.15	0.03
On-Road Project Emissions	0.39	0.24	0.24	0.07	0.07	0.06
RTP Modeled Emissions	400.00	20.13	20.13	95.6	95.6	33.97
Total Emissions:	400.51	20.6	20.46	97.39	95.82	34.06
SIP Emission Budgets	817.0	20.2	20.2	141.4	141.4	34.0
Exceed SIP Emissions?	No	Yes	Yes	No	No	Yes
Evaluation Year	2030					
Onsite Project Emissions	0.12	0.23	0.09	1.72	0.15	0.03
On-Road Project Emissions	0.39	0.24	0.24	0.07	0.07	0.06
RTP Modeled Emissions	400	17.73	17.73	110.4	110.4	40.36
Total Emissions:	400.51	18.2	18.06	112.19	110.84	40.45
SIP Emission Budgets	817	17.8	17.8	141.4	141.4	40.4
Exceed SIP Emissions?	No	Yes	Yes	No	No	Yes

Unmit = unmitigated; Mit = mitigated

6.3.4 Alternative 4 (Single sale of the North Site and South Site)

6.3.4.1 Construction Phase

Table 6.3-7 shows the impacts from Alternative 4 construction activities. As with Alternatives 1 through 3, construction activities would be subject to the terms and conditions of the Clark County Dust Control regulations, and hence mitigation was applied to the modeling to show a reduction in impacts from dust-generating activities.

**Table 6.3- 7
Construction Period Emissions for Alternative 4 (tons per day)**

	CO	NOx	PM ₁₀ Unmit	PM ₁₀ Mit	VOCs
Evaluation Year	2013				
Project Emissions	0.10	0.23	2.51	0.78	0.03
RTP Modeled Emissions	375.00	31.85	78.60	78.60	39.49
Total Emissions	375.10	32.08	81.11	79.38	39.52 3
SIP Emission Budgets	690.0	31.9	141.4	141.4	39.5
Exceed SIP Emissions?	No	Yes	No	No	Yes

Unmit = unmitigated; Mit = mitigated

As shown in Table 6.3-7, construction period emissions for NO_x and VOCs exceed the SIP Emission budget allocations in the RTP, which means that approval of Alternative 4 would impede the ability to bring the project area into compliance with the NAAQS for ozone and does not conform to the Clark County RTP or the SIP.

6.3.4.2 Operational Phase

The operational phase of Alternative 4 includes both on site emissions associated with the mining and processing of aggregate for sale and off site emissions of haul trucks on the roadways throughout the Las Vegas valley transporting aggregate to the construction sites. Off site emissions are based on 1,562 trips per day for haul trucks to transport material at an average of 28 miles per trip. There are a total of 43,736 VMT by the haul trucks. Calculations of haul truck activities include both exhaust and road dust emissions associated with the VMT. Table 6.3-8 shows the anticipated tons per day of criteria pollutants for Alternative 4, assuming a nine-hour workday for unmitigated and mitigated with exporting a maximum of 7 million tons per year. As shown, with or without the incorporation of mitigation measures MM1 through MM10 (See Section 4.1-4 of the Draft EIS), this alternative is above the SIP emission budgets for NO_x, and VOCs, which means that approval of Alternative 4 would impede the ability to bring the project area into compliance with the NAAQS for ozone and does not conform to the Clark County RTP or the SIP.

**Table 6.3- 8
Operational Emissions for Alternative 4 (tons per day)**

	CO	NOx Unmit	NOx Mit	PM ₁₀ Unmit	PM ₁₀ Mit	VOCs
Evaluation Year	2020					
Onsite Project Emissions	0.13	0.24	0.09	2.41	0.21	0.03
On-Road Project Emissions	0.53	0.33	0.33	0.10	0.10	0.08
RTP Modeled Emissions	400.00	20.13	20.13	95.6	95.6	33.97
Total Emissions:	400.66	20.7	20.55	99.90	95.91	34.08
SIP Emission Budgets	817.0	20.2	20.2	141.4	141.4	34.0
Exceed SIP Emissions?	No	Yes	Yes	No	No	Yes
Evaluation Year	2030					
Onsite Project Emissions	0.13	0.24	0.09	2.41	0.21	0.03
On-Road Project Emissions	0.53	0.33	0.33	0.10	0.10	0.08
RTP Modeled Emissions	400.00	17.73	17.73	110.4	110.4	40.36
Total Emissions:	400.66	18.3	18.15	112.91	110.71	40.47
SIP Emission Budgets	817	17.8	17.8	141.4	141.4	40.4
Exceed SIP Emissions?	No	Yes	Yes	No	No	Yes

Unmit = unmitigated; Mit = mitigated

6.3.5 Alternative 5 (No Action Alternative)

Under the No Action Alternative, the BLM sale of a mineral materials contract would not occur in the Sloan Hills area. Mining operations within the Proposed Action area would not be authorized. No surface disturbance would occur, and no impacts to the existing physical or biological environment would take place. Approximately 120 million tons of construction aggregate would not be produced at this location. However, a continuing demand for construction aggregate materials within the Las Vegas valley would necessitate alternative mining locations. Because no production would occur at the site, under Alternative 5 no construction would be required, and hence no impacts to air quality would be realized. Alternative 5 is the only alternative that is in conformance with the Clark County RTP and SIP.

6.3.6 General Conformity Analysis Conclusions

The predicted air pollutant emissions associated with all four proposed alternative actions construction phases exceed the SIP NO_x Emission Budget and operational phases exceed the SIP NO_x and VOCs Emission Budgets. Therefore, Alternatives 1 through 4 would impede the ability to bring the project area into compliance with the NAAQS for ozone and does not conform to the Clark County RTP or the SIP. Alternative 5, the No Action Alternative will not generate any emissions and would conform to the Clark County RTP and the SIP.

6.4 HAZARDOUS AIR POLLUTANTS (HAP) ANALYSIS

EPA and Clark County DAQ requested an analysis of DPM, which is classified as a HAP. DPM is part of a complex mixture that makes up diesel exhaust. DPM is commonly found throughout the environment and is estimated by EPA's National Scale Assessment to contribute to the human health risk. The sizes of

diesel particulates that are of greatest health concern are those that are in the categories of fine, and ultra fine particles. The composition of these fine and ultra fine particles may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals and other trace elements. In addition, the particulates are coated with many other hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde and polycyclic aromatic hydrocarbons. Diesel exhaust is emitted from a broad range of diesel engines; the on road diesel engines of trucks, buses and cars and the off road diesel engines that include locomotives, marine vessels and heavy duty equipment. Because the primary source of combustion emissions generated by the project is from diesel fueled heavy duty off road equipment and diesel fueled haul trucks, the EPA and Clark County DAQ requested an analysis of DPM. Because of the dangers of DPM exposure, this analysis focuses on the human health risk to people within the communities in the immediate vicinity of the project site.

6.4.1 Human Health Risk Assessment Methodology

Daily emissions of DPM were determined for the Proposed Action's heavy-duty equipment and truck fleet using the EPA AP42 emission factors. Concentrations of DPM were evaluated using the USEPA AERMOD Dispersion model. Cancer and non-cancer risks for DPM were determined using the EPA Guidelines for Exposure Assessment. The following equation is used to determine the associated cancer risk:

$$\text{Cancer Risk} = \text{Inhalation Dose (mg/kg-day)} * (\text{Cancer Potency (mg/kg-day)}^{-1})$$

The Cancer Potency is the potential risk of developing cancer per unit of average daily dose over a 70-year residential, 30-year working, or 9 year school lifetime. Cancer Potency Factors have been determined by the EPA as $1.1 \text{ (mg/kg-day)}^{-1}$ for DPM.

The inhalation dose for DPM is determined by the following equation:

$$\text{Dose} = (C * \text{DBR} * A * \text{EF} * \text{ED} * 10^{-6}) / \text{AT}$$

Where:

- Dose = Dose through inhalation (mg/kg/day)
- 10^{-6} = Micrograms to milligram conversion and liters to cubic meters conversion.
- C = Concentration in air ($\mu\text{g}/\text{m}^3$) (from AERMOD dispersion model)
- DBR = Daily Breathing Rate (L/kg bodyweight – day) (302 for residential; 249 for workers; and 452 for students)
- A = Inhalation absorption factor (1)
- EF = Exposure frequency (days/year) (365 for residential; 240 for worker and student)
- ED = Exposure duration (years) (70 for residential; 30 for worker, and 9 for student)
- AT = Time period over which exposure is averaged (days) (22550 for a lifetime exposure).

The following equation was used to determine the non-cancer risk DPM:

$$\text{HQ} = C / \text{REL}$$

Where:

- HQ = Hazard Quotient: an expression of the potential for non-cancer health effects associated with the substance being evaluated.
- C = Concentration in air ($\mu\text{g}/\text{m}^3$) (from AERMOD dispersion model)
- REL = Reference exposure level; the concentration at which no adverse health effects are anticipated ($5 \mu\text{g}/\text{m}^3$ for DPM).

The analysis of DPM focuses on areas within 1/4 mile of the on-site DPM sources. Sensitive receptors are defined as residential communities, schools, hospitals, and daycare facilities. Two residential communities near the project site fit these criteria and are the focus of the human health risk assessment.

6.4.2 Risk Characterization for DPM

The maximum concentrations of DPM for each of the receptors are shown in Table 6.4-1. Table 6.4-1 also shows the annual DPM concentration and resulting cancer risk for sensitive receptors in the project area. As shown, cancer risks from DPM range from 0.36 in one million for residential portions of Sloan to 3.03 in one million for the future planned expansion of Inspirada. Additionally, the maximum cancer risks are less than 10 in one million for all receptors. DPM emissions from the proposed Project represent a less than significant health risk. Figures 6.4-1 shows the locations of each receptor and Figures 6.4-2 through 6.4-5 show the dispersion of DMP for each alternative.

6.4.3 Hazardous Air Pollutant (HAP) Conclusions

The predicted human health impacts associated with all four proposed action alternatives are less than 3.03 at sensitive receptor locations. Therefore, Alternatives 1 through 4 are considered to have *de minimis* levels of HAP emissions. Alternative 5, the No Action Alternative will not generate any HAP emissions and will not have any environmental consequences associated with HAPs.

**Table 6.4- 1
Unmitigated DPM Health Risk**

Location	Concentration ($\mu\text{g}/\text{m}^3$)	Maximum Cancer Risk (risk per million)	Maximum Non- cancer Risk (risk per million)
Alternative 1			
Max at project Site	0.39740	126.59	0.079
Max at existing community of Inspirada (R7)	0.00188	1.02	0.00038
Max at planned area of Inspirada (R11)	0.00513	2.78	0.00103
Max at existing community of Anthem (R8)	0.00233	1.26	0.00053
Max at residential areas of Sloan (R3)	0.00087	0.47	0.00017
Alternative 2			
Max at project Site	0.563	179.34	0.1126
Max at existing community of Inspirada (R7)	0.00188	1.02	0.00038
Max at planned area of Inspirada (R12)	0.00560	3.03	0.00112
Max at existing community of Anthem (R8)	0.00236	1.28	0.00047
Max at residential areas of Sloan (R3)	0.00095	0.51	0.00019
Alternative 3			
Max at project Site	0.149	47.46	0.0298
Max at existing community of Inspirada (R7)	0.00182	0.99	0.00270
Max at planned area of Inspirada (R10)	0.00472	2.56	0.00094
Max at existing community of Anthem (R8)	0.0022	0.70	0.00208
Max at residential areas of Sloan (R3)	0.00067	0.36	0.00013
Alternative 4			
Max at project Site	0.698	222.35	0.1396
Max at existing community of Inspirada (R7)	0.00252	1.36	0.0005
Max at planned area of Inspirada (R12)	0.00752	2.40	0.0015
Max at existing community of Anthem (R9)	0.00325	1.76	0.00065
Max at residential areas of Sloan (R3)	0.00127	0.69	0.00018
Thresholds for Sensitive Receptors		10	1
Significant?		No	No



Source: Google Earth 2012.

- Project Site
- ▲ _{R1} Receptor Location



Not to scale.

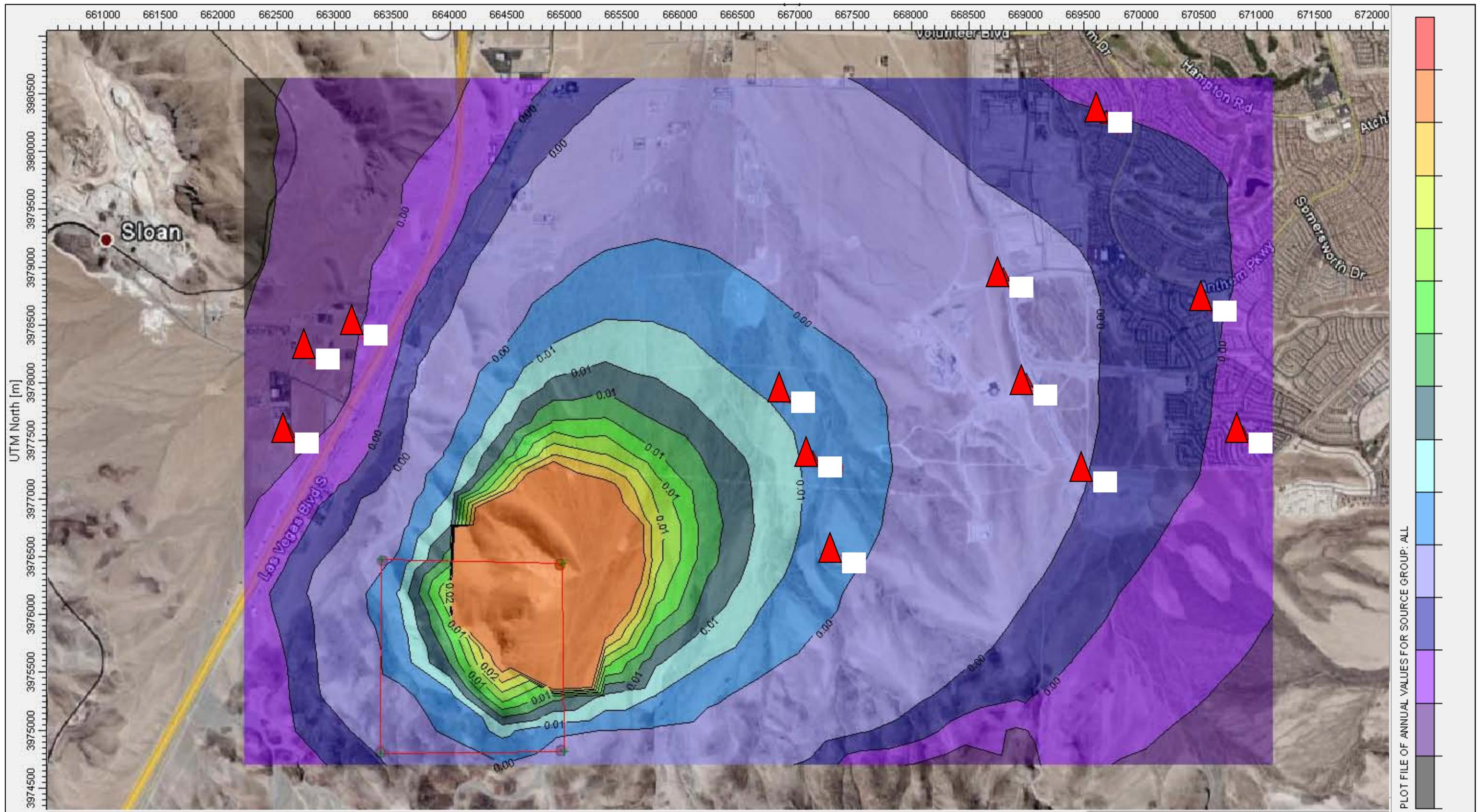
Proposed Sloan Hills Competitive Mineral Material Sales

Figure 6.4-1
Receptor Locations

Prepared by::

ATKINS

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Source: Google Earth 2012.

- Project Site
- ▲ Receptor Location



Not to scale.

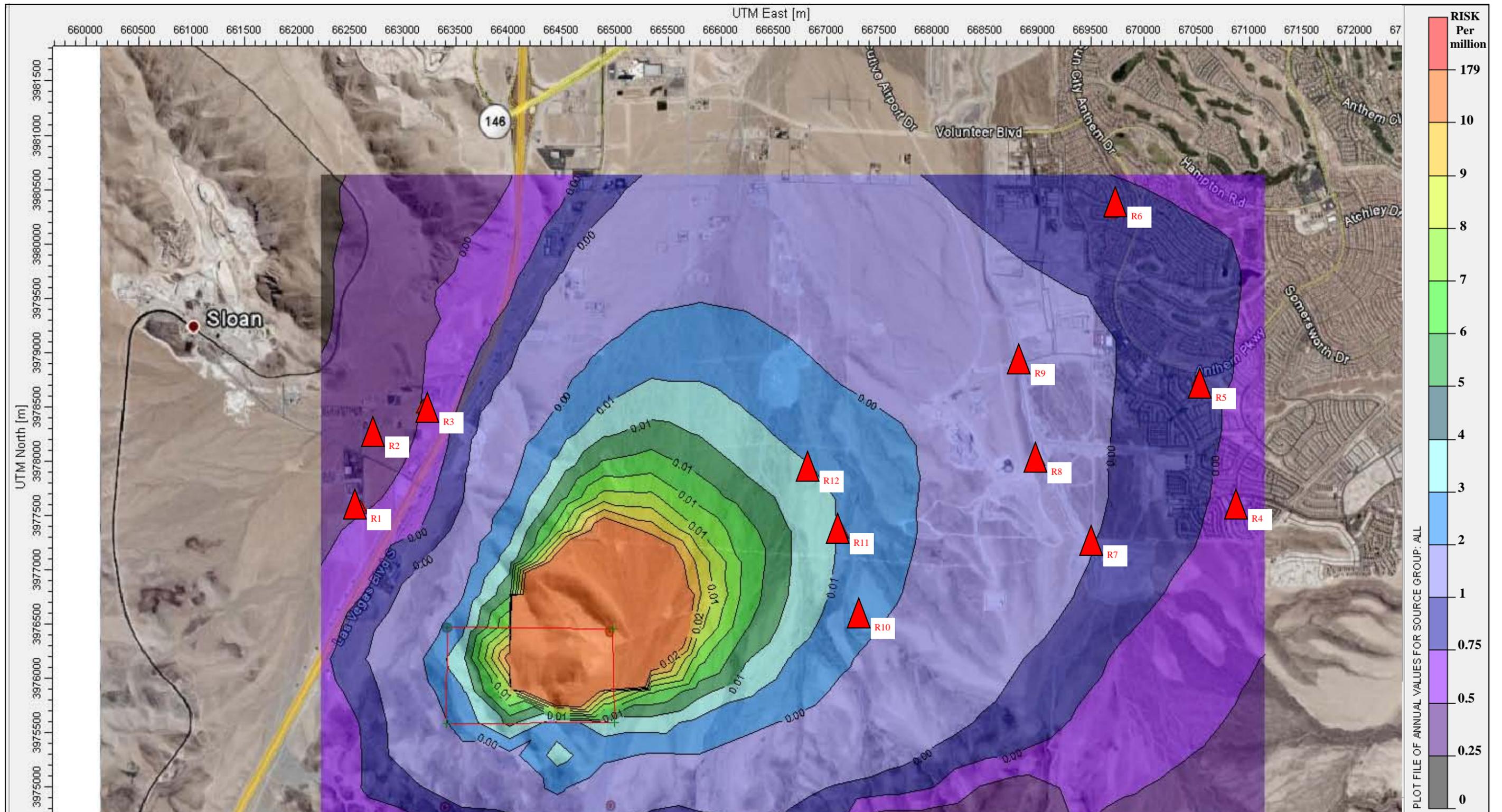
Proposed Sloan Hills Competitive Mineral Material Sales

Figure 6.4-2
Alternative 1: Cancer Risk

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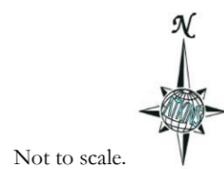


Source: Google Earth 2012.

Proposed Sloan Hills Competitive Mineral Material Sales

Figure 6.4-3
Alternative 2: Cancer Risk

- Project Site
- ▲ R1 Receptor Location

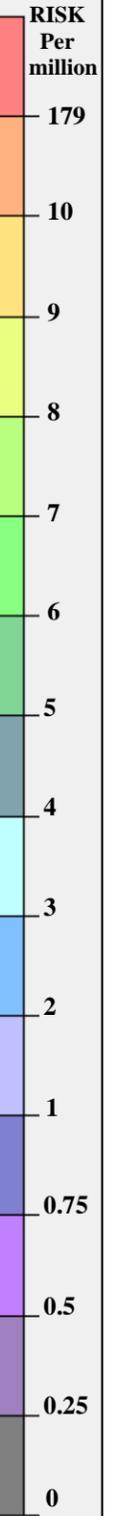


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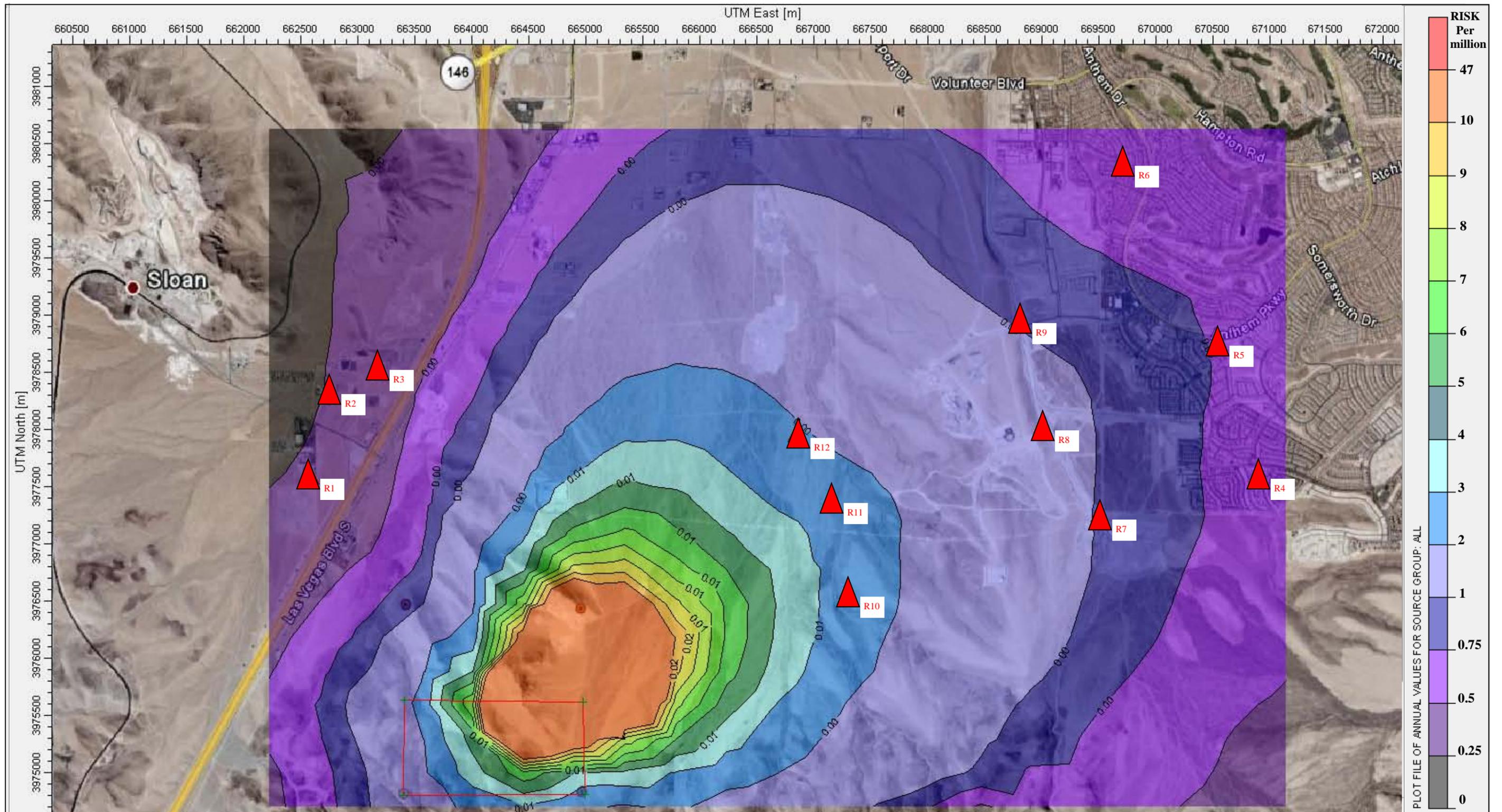
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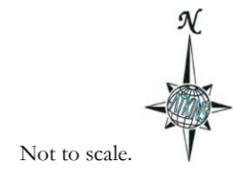
Source: Google Earth 2012.

Proposed Sloan Hills Competitive Mineral Material Sales

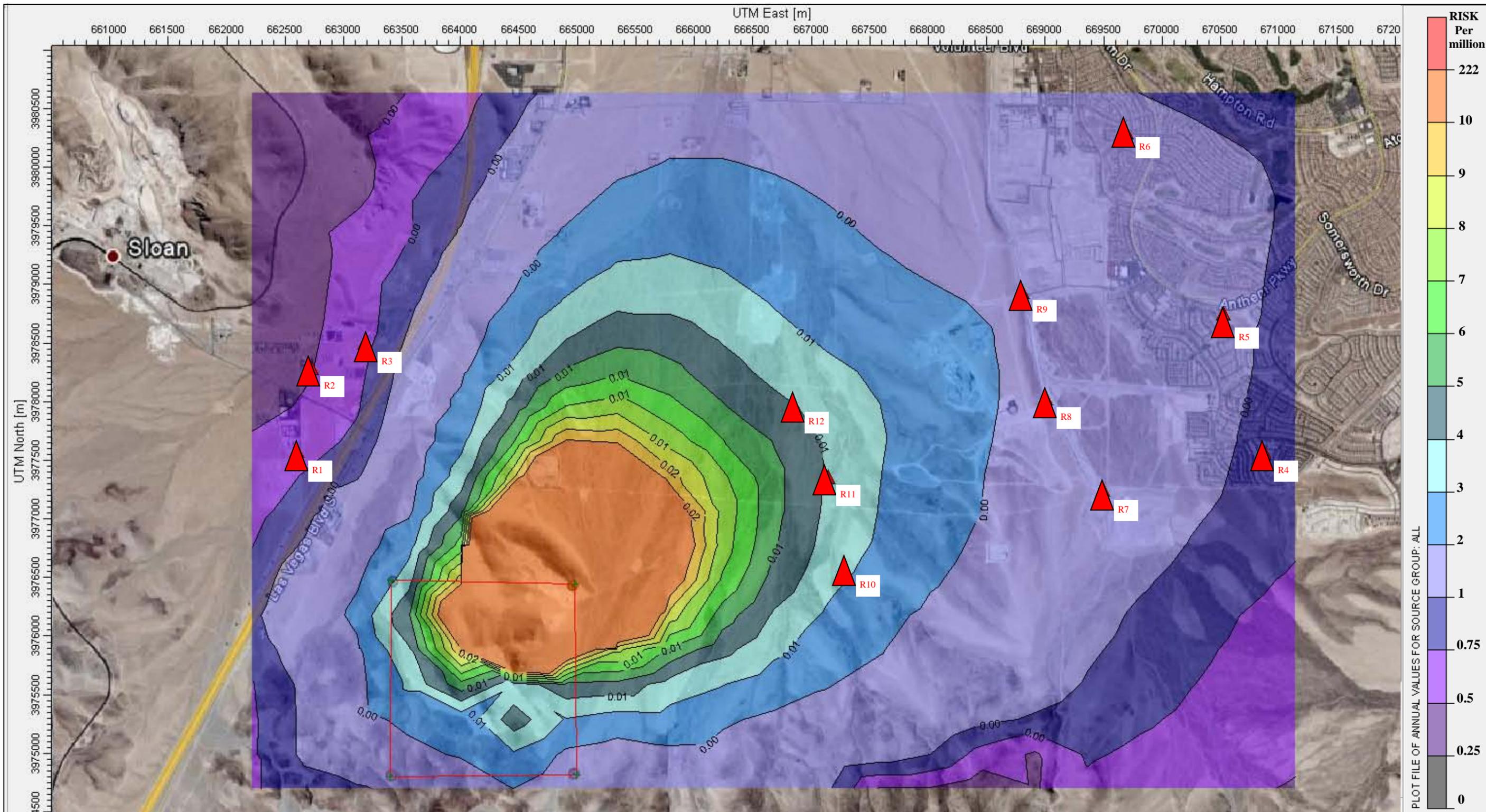
Figure 6.4-4
Alternative 3: Cancer Risk

Prepared by: **ATKINS**

- Project Site
- ▲ R_i Receptor Location



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Source: Google Earth 2012.

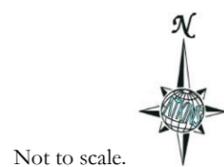
Proposed Sloan Hills Competitive Mineral Material Sales

Figure 6.4-5
Alternative 4: Cancer Risk

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- Project Site
- ▲ R_i Receptor Location



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6.5 CLIMATE CHANGE ANALYSIS

The Council on Environmental Quality (CEQ) provides guidance for consideration on the effects of GHG emissions and climate change in their evaluation of proposals for federal actions under NEPA (42 USC 4321 et seq.). The CEQ guidance explains how agencies of the federal government should analyze the environmental effects of GHG emissions and climate change when they describe the environmental effects of proposed agency actions in accordance with Section 102 of NEPA and the CEQ *Regulations for Implementing the Procedural Provisions of NEPA* (40 CFR parts 1500-1508). The environmental analysis and documents produced in the NEPA process should provide the decision maker with relevant and timely information about the environmental effects of federal agency actions and reasonable alternatives to mitigate those impacts.

NEPA demands informed, realistic governmental decision making. CEQ proposes to advise federal agencies to consider, in scoping their NEPA analyses, whether analysis of the direct and indirect GHG emissions from their proposed actions may provide meaningful information to decision makers and the public. Specifically, if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons (MT) or more of CO₂-equivalent (CO₂e) GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public. For long-term actions that have annual direct emissions of less than 25,000 MT CO₂e, CEQ encourages federal agencies to consider whether the action's long-term emissions should receive similar analysis.

6.5.1 Alternative 1 (Two Independent Mineral Material Sales)

The construction phase of Alternative 1 would generate 1,027 MT CO₂e. The operational phase of Alternative 1 includes both on-site emissions associated with the mining and processing of aggregate for sale and off-site emissions of haul trucks on the roadways throughout the Las Vegas valley transporting aggregate to the construction sites. Off-site emissions are based on 2,232 trips per day for haul trucks to transport material at an average of 28 miles per trip. There are a total of 62,496 VMT by the haul trucks. Calculations of haul truck activities include both exhaust and road dust emissions associated with the VMT. The anticipated GHG emissions for Alternative 1, assuming a nine-hour workday exporting a maximum of 10 million tons per year is 6,228 MT CO₂e, which is below the level recommended indicator to receive a quantitative and qualitative assessment. For this reason, impacts associated with Alternative 1 GHG emissions are considered *de minimis*.

6.5.2 Alternative 2 (Sale of North Site Only)

The construction phase of Alternative 2 would generate 785 MT CO₂e. The operational phase of Alternative 2 includes both on-site emissions associated with the mining and processing of aggregate for sale and off-site emissions of haul trucks on the roadways throughout the Las Vegas valley transporting aggregate to the construction sites. Off-site emissions are based upon 1,116 trips per day for haul trucks to transport material at an average of 28 miles per trip. There are a total of 31,248 VMT by the haul trucks. Calculations of haul truck activities include both exhaust and road dust emissions associated with the VMT. The anticipated GHG emissions for Alternative 2, assuming a nine-hour workday exporting a maximum of 5 million tons per year is 3,365 MT CO₂e, which is below the level recommended indicator

to receive a quantitative and qualitative assessment. For this reason, impacts associated with Alternative 2 GHG emissions are considered *de minimis*.

6.5.3 Alternative 3 (Sale of South Site Only)

The construction phase of Alternative 3 would generate 785 MT CO₂e. The operational phase of Alternative 3 includes both on-site emissions associated with the mining and processing of aggregate for sale and off-site emissions of haul trucks on the roadways throughout the Las Vegas valley transporting aggregate to the construction sites. Off-site emissions are based upon 1,116 trips per day for haul trucks to transport material at an average of 28 miles per trip. There are a total of 31,248 VMT by the haul trucks. Calculations of haul truck activities include both exhaust and road dust emissions associated with the VMT. The anticipated GHG emissions for Alternative 3, assuming a nine-hour workday exporting a maximum of 5 million tons per year is 3,365 MT CO₂e, which is below the level recommended indicator t to receive a quantitative and qualitative assessment. For this reason, impacts associated with Alternative 3 GHG emissions are considered *de minimis*.

6.5.4 Alternative 4 (Single Sale of North Site and South Site)

The construction phase of Alternative 3 would generate 785 MT CO₂e. The operational phase of Alternative 4 includes both on-site emissions associated with the mining and processing of aggregate for sale and off-site emissions of haul trucks on the roadways throughout the Las Vegas valley transporting aggregate to the construction sites. Off-site emissions are based upon 1,562 trips per day for haul trucks to transport material at an average of 28 miles per trip. There are a total of 43,736 VMT by the haul trucks. Calculations of haul truck activities include both exhaust and road dust emissions associated with the VMT. The anticipated GHG emissions for Alternative 4, assuming a nine-hour workday for unmitigated and mitigated with exporting a maximum of 7 million tons per year is 3,620 MT CO₂e, which is below the level recommended indicator t to receive a quantitative and qualitative assessment. For this reason, impacts associated with Alternative 4 GHG emissions are considered *de minimis*.

6.5.5 Alternative 5 (No Action Alternative)

Under the No Action Alternative, the BLM sale of a mineral materials contract would not occur in the Sloan Hills area. Mining operations within the Proposed Action area would not be authorized. No surface disturbance would occur, and no impacts to the existing physical environment would take place. Approximately 120 million tons of construction aggregate would not be produced at this location. However, a continuing demand for construction aggregate materials within the Las Vegas valley would necessitate alternative mining locations. Because no production would occur at the site, under Alternative 5 no construction would be required, no GHG emissions would occur, and hence no impacts would be realized.

6.5.6 Climate Change Conclusions

The predicted GHG emissions associated with all four proposed alternative actions are less than the CEQ recommended indicator level of 25,000 MT CO₂e. Alternatives 1 through 4 are considered to have *de minimis* levels of emissions and associated climate change impacts. Alternative 5, the No Action Alternative will not generate any GHG emissions and will not have any environmental consequences

associated with climate change. Therefore, Alternatives 1 through 5 do not create or contribute to climate change impacts.

6.6 SUMMARY OF SUPPLEMENTAL AIR QUALITY ANALYSES

6.6.1 General Conformity Analysis

Alternatives 1 through 4: The predicted air pollutant emissions associated with Alternatives 1 through 4 exceed the SIP NO_x Emission Budget during the construction phases and exceed the SIP NO_x and VOCs Emission Budgets during operational phases. Therefore, Alternatives 1 through 4 would impede the ability to bring the project area into compliance with the NAAQS for ozone and does not conform to the Clark County RTP or the SIP.

Alternative 5: Alternative 5, the No Action Alternative will not generate any emissions and conforms to the Clark County RTP and the SIP.

6.6.2 Hazardous Air Pollutants (HAP) Analysis

Alternatives 1 through 4: The predicted human health impacts associated with all four proposed alternative actions are less than 3.03 at sensitive receptor locations. Therefore, Alternatives 1 through 4 are below the *de minimis* levels of HAP emissions and will not create human health impacts.

Alternative 5: Alternative 5, the No Action Alternative will not generate any HAP emissions and will not create human health impacts.

6.6.3 Climate Change Analysis

Alternatives 1 through 4: The predicted GHG emissions associated with all four proposed alternative actions are less than the CEQ recommended indicator level of 25,000 MT CO₂e. Alternatives 1 through 4 are below the *de minimis* levels of emissions and will not have any environmental consequences associated with climate change.

Alternative 5: Alternative 5, the No Action Alternative will not generate any GHG emissions and will not have any environmental consequences associated with climate change. Therefore, Alternatives 1 through 5 do not create or contribute to climate change impacts.

6.6.4 Supplemental Air Quality Analyses Conclusions

Alternatives 1 through 4 exceed the SIP Emission Budgets for NO_x and VOCs emissions (ozone precursor pollutants) and would therefore impede compliance of the NAAQS for ozone in the project area if implemented. Furthermore, Alternatives 1 through 4 would not conform to the Clark County RTP or the SIP for the State of Nevada.

Alternative 5, the No Action Alternative will not generate any emissions and is in conformance to the Clark County RTP and the SIP for the State of Nevada.

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