APPLICATION REVIEW

AND DETERMINATION OF INITIAL COMPLIANCE

FOR:

NEWMONT MINING CORPORATION

Golconda, Nevada; HA – 066

Class I Air Quality Operating Permit

AP1041-0723.02 (Minor Revision)
FIN A0003, Vista Underground Operations
Shotcrete Plant
Air Case #7452

BY

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR POLLUTION CONTROL

ERIC HASTY
ENVIRONMENTAL SCIENTIST II

SEPTEMBER 2013

1.0 INTRODUCTION

On April 11, 2013, Newmont Mining Corporation – Twin Creeks Mine (NMC) submitted an application to the Nevada Division of Environmental Protection – Bureau of Air Pollution Control (BAPC) for a minor revision of the Class I (Title V) Air Quality Operating Permit AP1041-0723.02. The draft permit covers the addition of a shotcrete plant for the Vista Underground operations at NMC. The current application defaulted administratively complete on April 26, 2013, which constitutes the Official Date of Submittal (ODS) of the application. The regulatory deadline for issuance/denial of the Class I Minor Revision is July 25, 2013, 90 days after the ODS (NAC 445B.3425).

On May 13, 2013, the BAPC sent NMC a request for more information to continue the air dispersion modeling as well as the construction of a draft permit. Newmont's response was received on May 24, 2013. Therefore, the new deadline for issuance/denial of the minor revision will be no earlier than July 29, 2013.

In this application for a minor revision for the air quality operating permit, NMC is requesting to:

- Add System 32A – Vista Underground Shotcrete Plant: Vista Underground Silo Loading, Lime/Cement/Flyash Silo Loading (S2.051)
- Add System 32B – Vista Underground Shotcrete Plant: Vista Underground Lime/Cement/Flyash, Lime/Cement/Flyash Silo Discharge to Hopper C-1 (PF1.032)
- Add System 32C – Vista Underground Shotcrete Plant: Vista Underground Aggregate Loading, Coarse/Fine Aggregate Loading to Hopper C-3 (PF1.033)
- Add System 32D – Vista Underground Shotcrete Plant: Vista Underground Aggregate Loading, Hopper C-3 and Discharge to Mixing Hopper C-2 Via Totally Enclosed Feed Auger (PF1.034)
- Add System 32E – Vista Underground Shotcrete Plant: Vista Underground Lime/Cement/Flyash Hopper, Lime/Cement/Flyash Hopper C-1 and Discharge to Mixing Hopper C-2 Via Totally Enclosed Feed Auger (PF1.035)

This addition will increase the PM (particulate matter) by 2.26 tons per year and the PM_{10} (particulate matter less than 10 microns in diameter) by 1.19 tons per year.

In the original application NMC included System 32F, Truck Loading (PF1.036) and System 32G, Cement Rock Fill (S2.052) to be permitted as emission points but later requested that the systems be removed when it was determined that both processes are inherently wet.

NMC mine is located in Humboldt County, north of Interstate 80 between Elko and Winnemucca, Nevada; and approximately 35 miles northeast of Golconda, Nevada. The facility operations are located in Hydrographic Area 66 – Kelley Creek Area. The Standard Industrial Classification (SIC) code for this facility is 1041 (Gold Ore Processing).

2.0 DESCRIPTION OF PROCESS

NMC's current existing Class I Air Quality Operating Permit is permitted to operate two open pit mines, three heap leach pads, a primary crushing circuit, a Semi-Autogenous Grinding (SAG) mill, a carbon-in-leach (CIL) mill, several lime silos, and an analytical laboratory with several crushers and drying ovens. All activities under the existing Class I Air Quality Operating Permit are located on contiguous property owned and controlled by Newmont.

The proposed shotcrete plant will be used for the underground operations and consist of a silo at the Vista Underground portal at the Twin Creeks Mine. The shotcrete plant and silo will be located in an existing mine pit and will not disturb any undisturbed ground. The primary use of the shotcrete plant is to manufacture concrete which is used to stabilize the portals, audits and drifts of the underground mine. The silo is used to store cement, flyash and lime. Additionally, this system will be used to make rockfill.

Wet Shotcrete – Bulk lime/cement/flyash is pneumatically loaded to the silo (S2.051) and is delivered from the silo to the hopper C1 via a totally enclosed auger (PF1.032). The lime/cement/flyash is fed from the cement hopper C1 to the mixing screw via a totally enclosed auger (PF1.035). Aggregate is delivered from an outside source to the aggregate storage area and the aggregate is loaded into hopper C3 via a front-end loader (PF1.033). A totally enclosed feed auger (PF1.034) at the bottom of the hopper C3 feeds the aggregate into the enclosed mixing screw and into the enclosed mixing hopper C2. The aggregate and lime/cement/flyash is mixed together with water to create the shotcrete. The wet shotcrete is then discharged into a suitable truck for delivery **(this was originally PF1.036 but was removed from the permit as requested by NMC when it was determined to be an inherently wet process)**.

Cemented Rock Fill* – Bulk lime/cement/flyash is delivered from the silo (S2.051) to the wet slurry mixing tank via a totally enclosed feed auger to the slurry mixing tank (S2.052). As material is augured into the wet slurry mixing tank, water sprays are activated which creates the slurry while serving as the control of 100% because it is an inherently wet process. A pump helps to mix the materials and the slurry is discharged via a pipe to a mixing pit. A front-end loader places the aggregate from a storage area into the mixing pit, mixes the two components then loads the cemented rockfill into a waiting truck.

***Cemented Rock Fill (S2.052) was removed from the permit when NMC determined it was an inherently wet process.**

In addition to the revisions requested by NMC, the BAPC:

- Added Section II, General Construction Conditions in accordance with NAC 445B.250 for notification of planned construction.
- Added Section IIA, Specific Construction Conditions in accordance with NAC 445B.3405 for initial performance tests for emission units S2.051 and PF1.032 – PF1.035.

3.0 APPLICABLE REGULATIONS

3.1 NEVADA REVISED STATUTES

The Nevada Revised Statutes (NRS) are the current codified laws of the State of Nevada. The NRS is the statutory authority for the adoption and implementation of administrative regulations The statutes relating to the control of air pollution are contained in Title 40, Public Health and Safety, Chapter 445B, Air Pollution, NRS 445B.100 through NRS 445B.640. The NRS specifies that the State Environmental Commission is the governing body given the power to adopt administrative regulations. Because the NRS is the enabling statutory authority, very few specific requirements are contained in the statutes. Rather, the NRS provides, generally, broad authority for the adoption and implementation of air pollution control regulations. The NMC facility will be subject to the NRS and need to comply with all applicable regulations under the NRS. The NRS may be viewed at the following website: http://www.leg.state.nv.us/NRS/Index.cfm

3.2 NEVADA ADMINISTRATIVE CODE

The Nevada Administrative Code (NAC) contains the regulations that have been adopted by the State Environmental Commission (SEC), pursuant to the authority granted by the Nevada Revised Statutes (NRS), relating to the control of air pollution. The NAC requires that, where State regulations are more stringent in comparison to Federal regulations, the State regulations are applicable. The NAC sets forth, by rule, maximum emission standards for visible emissions (opacity), PM_{10} (particulate matter less than 10 microns in diameter) and sulfur emitting processes. Other requirements are established for incinerators, storage tanks, odors and maximum concentrations of criteria air pollutants in the ambient air. Other NAC regulations specify the requirements for applying for and method of processing applications for operating permits. All the equipment considered in this application must meet, at a minimum, the applicable standards and requirements set forth in the NAC, specifically, the emission standards contained in NAC 445B.22027 through 445B.22033 for particulate matter, 445B.2204 through 445B.22047 for sulfur emissions, 445B.22017 for opacity, and the Nevada Ambient Air Quality Standards as set forth in NAC 445B.310 through 445B.311. The NAC may be viewed at the following website: http://www.leg.state.nv.us/NAC/CHAPTERS.HTMl

3.3 NEVADA APPLICABLE STATE IMPLEMENTATION PLAN

The Applicable State Implementation Plan (ASIP) is a document that is prepared by a state or local air regulatory agency and required to be submitted to the U.S. EPA for approval. Title I of the Clean Air Act is the statutory authority for the U.S. EPA regulations that require a State to submit an ASIP. The contents of the ASIP are intended to show how a state, through the implementation and enforcement of the regulations contained in the ASIP, will either show how attainment of the national ambient air quality standards (NAAQS) will be achieved or how a state will continue to maintain compliance with the NAAQS.

3.4 CODE OF FEDERAL REGULATIONS

The Code of Federal Regulations (CFR) are regulations adopted by the U.S. EPA and published in the Federal Register pursuant to the authority of the granted by Congress in the Clean Air Act. The CFR addresses multiple aspects, including but not limited to, permitting requirements, performance standards, testing methods, and monitoring requirements. The CFRs may be viewed online at the following website: http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=%2Findex.tpl

3.0 APPLICABLE REGULATIONS (continued)

3.4.1 NEW SOURCE PERFORMANCE STANDARDS

Section 111 of the Clean Air Act, "Standards of Performance of New Stationary Sources," (NSPS) requires EPA to establish federal emission standards for source categories which cause or contribute significantly to air pollution. Each NSPS defines the facilities subject to these requirements and prescribes emission limits for specified pollutants, compliance requirements, monitoring requirements, and test methods and procedures. These standards are intended to promote use of the best air pollution control technologies, taking into account the cost of such technology and any other non-air quality, health, and environmental impact and energy requirements. These standards apply to sources which have been constructed or modified since the proposal of the standard. Since December 23, 1971, the Administrator has promulgated 88 such standards and associated test methods. These standards can be found in the CFR at Title 40 (Protection of Environment), Part 60 (Standards of Performance for New Stationary Sources).

Generally, state and local air pollution control agencies are responsible for implementation, compliance assistance, and enforcement of the NSPS. EPA retains concurrent enforcement authority and is also available to provide technical assistance when a state or local agency seeks help. EPA also retains a few of the NSPS responsibilities such as the ability to approve alternative monitoring methods to maintain a minimum level of national consistency.

No applicable NSPS for this minor revision.

3.4.2 FEDERAL NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

NESHAP for hazardous air pollutants (HAPs) are established in the CFR pursuant to Section 112 of the Clean Air Act Amendments of 1990. These standards regulate air pollutants that are believed to be detrimental to human health. The NESHAP program applies to all sources, both existing and new. These standards are codified in Title 40 CFR Parts 61 and 63.

Part 61, which predates the Clean Air Act Amendments of 1990, includes specific standards, reporting and recordkeeping requirements, and test methods for the initial eight hazardous air pollutants: asbestos, benzene, beryllium, coke oven emissions, inorganic arsenic, mercury, radionuclides, and vinyl chloride. The regulations covering these eight hazardous air pollutants focused on health-based considerations. NESHAPs were established for certain operations that commonly emit the eight hazardous air pollutants.

Other substances were included for consideration due to the serious health effects, including cancer, which may occur from ambient air exposure to those substances. However, no specific restrictions were placed on facilities that used or released these compounds.

Under the Clean Air Act Amendments of 1990, Congress greatly expanded the Air Toxics program, creating a list of 189 substances to be regulated as hazardous air pollutants. Rather than regulating individual pollutants by establishing health-based standards, the new Air Toxics program granted EPA the authority to regulate specific industrial major source categories with NESHAPs based on maximum achievable control technology (MACT) for each source category. Thus, a number of NESHAPs have been established to regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants.

3.0 APPLICABLE REGULATIONS (continued)

3.4.2 FEDERAL NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (continued)

The standards in 40 CFR Part 63 are independent of the NESHAPs contained in 40 CFR Part 61 which remain in effect until they are amended, if appropriate, and added to this part. More information on NESHAPs can be found at the EPA Unified Air Toxics Website (http://www.epa.gov/ttn/atw/).

NESHAPs may cover both major sources and area sources in a given source category. Major sources are defined as those facilities emitting, or having the potential to emit, 10 tons per year or more of one Hazardous Air Pollutant (HAP) or 25 tons per year or more of multiple HAPs. Major sources are required to comply with MACT standards. Area sources are defined as those facilities that are not major sources. NMC's Class I OP is considered an area source of HAPs.

The generators listed under the insignificant activities list are subject to the NESHAP Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. These insignificant activities will be permitted in the pending renewal.

3.4.3 PREVENTION OF SIGNIFICANT DETERIORATION

The Prevention of Significant Deterioration (PSD) permitting program is a Clean Air Act permitting program for new and modified major stationary sources of air pollution. Implementation of the federal PSD regulations is delegated to the State of Nevada by U.S. EPA and these regulations are contained at 40 CFR Part 52.21. Therefore, BAPC implements the federal PSD regulations directly. These regulations specify federally required permitting procedures for each "major stationary source". The PSD regulations define a "stationary source" as "*any building, structure, facility, or installation which emits or may emit any air pollutant subject to regulation under the Act.*" A "building structure facility or installation" is defined as "*all of the pollutant-emitting activities which belong to the same industrial grouping are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same 'Major Group' (i.e., which have the same first two digit code) as described in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement.*"

"Major" is defined as the potential to emit of a stationary source, which equals or exceeds a specified threshold (in tons per year) of any air pollutant regulated under the Clean Air Act (40 CFR 52.21(b) (1)). The first threshold is for a stationary source that emits or has the potential to emit 100 tons per year or more of any regulated NSR pollutant and is defined as one of 28 specific categories of sources (see 40 CFR 52.21(b)(1)(i)(a)). The other applicability threshold is for any other stationary source that emits or has the potential to emit 250 tons per year of any regulated NSR pollutant (see 40 CFR 52.21(b) (1) (i) (b)).

NMC is not classified as one of the listed categories of sources, and the facility-wide potential to emit of regulated pollutants do not exceed 250 tons/yr. The facility is not a major source for PSD purposes.

3.0 APPLICABLE REGULATIONS (continued)

3.4.4 COMPLIANCE ASSURANCE MONITORING (CAM)

The U.S. EPA has promulgated requirements for sources to provide detailed monitoring plans that will ensure compliance with all applicable requirements. These monitoring requirements are contained in 40 CFR Part 64. Section 64.2 specifies that these monitoring requirements apply to a "pollutant specific emission unit at a major source" if all of the following are satisfied:

- The unit is subject to an emission limitation or standard;
- The unit uses a control device to achieve compliance with any such emission limitation or standard; and
- The unit has potential pre-control device (uncontrolled) emissions equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.

The key factors that would require the submission of a CAM plan are:

- The facility must be defined as a “major source”; and
- The units must be subject to an emission limitation or standard (acid rain limitations and standards are not included).

System 32A is subject to CAM.

4.0 EMISSIONS INVENTORY

4.1 PROPOSED EMISSIONS

The facility-wide emissions inventory summary for the current Air Quality Operating Permit is presented in Table 4.1. The facility is a major source for PM, PM_{10}, SO_2, and CO. The table below shows the net increase in emissions.

Table 4.1 Facility –Wide Potential to Emit Changes

	PM	PM_{10}	$PM_{2.5}$	SO_2	NO_X	CO	H_2SO_4	H_2S	Hg	VOC	CO_2
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Totals for June 2012 Operating Permit	196.23	144.98	ND	146.80	84.49	216.20	131.40	35.04	1.90	8.97	ND
Totals for September 2013 Operating Permit	198.49	146.17	ND	146.80	84.49	216.20	131.40	35.04	1.90	8.97	ND
Net Change in PTE for September 2013 Minor Revision	**2.26**	**1.19**	**1.19**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

ND – Not determined as part of this minor revision

5.0 AMBIENT AIR IMPACT ANALYSIS

5.1 INTRODUCTION/ PURPOSE

The purpose of this analysis is to determine the likely air quality impacts resulting from operation of the NMC property after the proposed revisions are made.

5.2 CLASSIFICATION OF AIR BASIN

The Twin Creeks property is located in Air Quality Hydrographic Basin (HA) 66, the Kelley Creek Area. HA 66 is currently not triggered for PSD.

5.3 AIR QUALITY MODELING ANALYSIS

5.3.1 AIR DISPERSION MODEL

The BAPC performed the requisite air dispersion modeling analysis and environmental evaluation for the current permit action using the currently approved/preferred U.S. EPA model AERMOD. The BAPC performed check runs to assess the sensitivity of the model to minor changes in source input parameters. The BAPC used Lakes Environmental's *AERMOD-View* graphical-user interface to input source information, generate receptors, and to actually run AERMOD (v. 12345).

5.3.2 AVERAGING PERIODS

The BAPC performed check model runs for all criteria pollutants for which there is an air quality standard and a PTE. Since the proposed permit only increased the emissions of particulate matter in the PTE , PM_{10} (24-hour, Annual) was the only criteria pollutant modeled. Compliance with the $PM_{2.5}$, 1-hour SO_2 and 1-hour NO_2 standards are not yet required for non-PSD sources, because the BAPC has not yet adopted these standards into the Nevada Administrative Code.

5.3.3 SOURCE PARAMETERS

Source input parameters were provided by NMC. No hour-of-day scalars (HROFDY) were used in the modeling. All emission sources were modeled at their maximum (or higher) hourly emission rates. All emission sources were referenced to the UTM NAD 83 project datum, as were buildings, fenceline corners, and receptors. There are 32 point and 35 volume sources in the model. Some process equipment with multiple release points were modeled as a single point source.

5.3.4 RECEPTORS

The BAPC placed plant boundary receptors at 25 meter intervals, with a proximal receptor array spaced at 50 meter intervals out to a distance of 2 kilometers from the fenceline. A total of 46,969 receptors were included in the model.

5.0 AMBIENT AIR IMPACT ANALYSIS (continued)

5.3.5 METEOROLOGICAL DATA

One-year of on-site meteorological data was used for modeling. NMC processed on-site meteorological data for the period 10/01/2009 – 09/30/2010 using the AERMOD meteorological pre-processor AERMET version 11059 and using the corresponding 12 months of upper air data (10/01/09 – 09/30/10) from the Elko, Nevada National Weather Service Station.

The model accepted the meteorological data. However, a warning message stated that the data was derived from an out dated version of AERMET. Since there were no critical error messages and the meteorological data was accepted and completed successfully by the AERMOD model, the BAPC allowed the data to be used.

5.3.6 BUILDING DOWNWASH

In accordance with current U.S. EPA and BAPC guidelines, building downwash was considered for all model runs. Building downwash effects were evaluated using the BPIP-PRIME algorithm to calculate projected building heights and widths for each point source in the model. This information is used by AERMOD to determine whether plume dispersion from a particular point source will be influenced by building downwash. In general, building downwash will cause the model to generate higher pollutant concentrations at the closest point of public access. The results indicated that building downwash effects are not significantly pronounced for most of the point sources in the model.

5.3.7 TERRAIN

AERMOD requires that elevated terrain be considered in air dispersion modeling analyses. Therefore, elevations were processed in AERMAP (v. 11103) and the following U.S. Geological Survey (USGS) 30-Meter Digital Elevation Model (DEM), processed in NAD 83 coordinates.

5.3.8 BACKGROUND CONCENTRATIONS

The BAPC has not operated any ambient monitoring sites in the vicinity of the Twin Creeks property. Therefore, PM_{10} backgrounds of 10.2 $\mu g/m^3$ and 9 $\mu g/m^3$ (pristine, rural areas) were used for the 24-hour and annual averaging periods, respectively. Background concentrations for the gaseous pollutants are assumed to be zero.

5.0 AMBIENT AIR IMPACT ANALYSIS (continued)

5.4 AIR QUALITY IMPACT ASSESSMENT

Results of air dispersion modeling are presented in Table 5.4-1. As can be seen, operation of the Twin Creeks property with the proposed revisions to the Operating Permit will not result in violations of the Nevada AAQS, because the total impacts (plus background) are less than the applicable AAQS values. Modeling by the BAPC confirmed that the highest impacts were at the fenceline.

Table 5.4-1

Newmont Twin Creeks – Vista Underground Shotcrete Minor Revision: BAPC Air Dispersion Model – September 2013

Pollutant	AAQS Averaging Period	BAPC Model Met Year	BAPC 2013 Model (µg/m3)	Background Concentration (µg/m3)	BAPC Total Impact	AAQS	BAPC Percent of Standard (%)
PM_{10}	24-hr	2009-2010	106.91	10.2	117.11	**150**	78
	Annual	2009-2010	7.33	9	16.33	**50**	33

Given the information provided by NMC in the Class I minor revision application, the BAPC determined that this minor revision will not result in a significant change in air quality at any location where the public is present on a regular basis. This determination is based on the fact that the minor revision is not anticipated to result in a significant increase in emissions. Also based on the location of the NMC facility, the presence of the public on a regular basis is very remote. Because this revision will not result in a significant change in the air quality, pursuant to NAC 445B.3395.8.(c) the provisions of NAC 445B.3395.6 and NAC 445B.3395.7, public notice provisions, do not apply.

6.0 CONCLUSIONS / RECOMMENDATIONS

Based on the above review and supporting data and analyses, operation of the NMC property under the new conditions of the draft Minor Revision of a Class I Air Quality Operating Permit AP1041-0723-02, will not result in violations of any applicable ambient air quality standards.

Appendix 1 - Emissions Spreadsheets for the Minor Revision
Appendix 2 - Draft Minor Revision of a Class I Air Quality Operating Permit AP1041-0723.02
Appendix 3 - Process Flow Diagram

Eric Hasty, Environmental Scientist II
Bureau of Air Pollution Control

Date

Jeffrey Kinder, P.E.
Supervisor, Permitting Branch
Bureau of Air Pollution Control

Date

Appendix 1

Emissions Spreadsheets for the Minor Revision

Newmont Mining Corporatio													
Annual PTE (tons/year)													
	System	PM	PM10	PM2.5	SO2	NOx	CO	VOC	Pb	Hg	H2S	HAPs	CO2e
	Total	2.26	1.19	1.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sys No.	Changes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32A	Lime/Cement/Flyash Silo Loading	1.95	1.07	1.07									
	Old Lime/Cement/Flyash Silo Loading	*1.95*	*1.07*	*1.07*									
32B	Lime/Cement/Flyash Silo Discharge into Hoppe	0.02	0.01	0.01									
	Old Lime/Cement/Flyash Silo Discharge into Hopper	*0.02*	*0.01*	*0.01*									
32C	Aggregate Loading into Hopper	0.07	0.04	0.04									
	Old Aggregate Loading into Hopper	*0.07*	*0.04*	*0.04*									
32D	Aggregate Transfer to Mixing Hopper	0.04	0.02	0.02									
	Old Aggregate Transfer to Mixing Hopper	*0.04*	*0.02*	*0.02*									
32E	Lime/Cement/Flyash Loading into Mixing Hoppe	0.18	0.05	0.05									
	Old Lime/Cement/Flyash Loading into Mixing Hopper	*0.18*	*0.05*	*0.05*									

Nevada Division of Environmental Protection
Bureau of Air Pollution Control

POLLUTANTS

EMISSIONS CALCULATIONS

FIN: A0003 Permit Number: AP 1041-0723.02

Facility Name: Newmont Mining Corporation
Project Name: Twin Creeks
System: Lime/Cement/Flyash Silo Loading

By: Eric Hasty | Date: 8/23/2013
Air Case:7452

Minor Revision of a Class I Air Quality Operating Permit	TYPE OF AP
XXXX	TYPE OF AP
XXXX	TYPE OF AP

	YES/NO	Notes: (Include sys in the PTE -example: CAP Limit or Alternative Scenario) (Revision - Date (Mo/Year) of issuance)
Include sys in the PTE?	YES	
Revision?	YES	

Approved: | Date:

I. EMISSION UNIT(S):

System	S2.XXX/ PF1.XXX	Description	Location UTM NAD 83 (m) North	East	Manufacturer	Model #	Serial #	SCC #	Year Manufactured
32A	S2.051	Lime/Cement/Flyash Silo Loading	7,570,624	486,257	NA	NA	NA	3-05-011-17	

II. CONTROL DEVICE(S):

Stack Parameters		Pollutant	Control(s) Type	Control (%)	Manufacturer's Guarantee Factor	Unit	Notes
Height (ft):	65.62	PM	Baghouse		0.0089	tons/lb	r Rating for Cement Supplement Unloading to
Diameter (ft):	0.92	PM10	Baghouse		0.0049	tons/lb	r Rating for Cement Supplement Unloading to
Temp (°F):	72	PM2.5	Baghouse		0.0049	tons/lb	r Rating for Cement Supplement Unloading to
Exit Vel (fps):	32.81	SO2					
Vol (ACFM):	NA	NOX					
Vol (DSCFM):	1,300	CO					
		VOC					

III. Operating Parameters:

Operating Hours hr/day	hr/yr	Throughput/Fuel Usage Hourly	Annual	Unit	Fuel Type	Heat Input (MMBtu) Hourly	Annual	Power Output Hourly	Unit	Heat Content
24	8,760	50.0	438,000.0	tons						

Note: The Conversion section is used for calculating to and from throughput/fuel usage and heat input using heat content values. See below for typical values.

	Coal (BTU/lb)	Diesel (BTU/gal)	Gasoline (BTU/gal)	Natural Gas (BTU/scf)	Propane (BTU/gallon)
Default	13,000	140,000	114,000	1,020	90,500

If used a formula to calculate: TYPE FORMULA

IV. Emission Limit Calculations:

Uncontrolled

Pollutant	Other Emission Factor Factor	Unit	Actual Emission Factor Factor	Unit	Emission Limit lb/hr	ton/yr	Reference	Notes
PM			3.14	lb/ton	**157.00**	**687.66**	AP 42 Table 11.12-2 Uncontrolled Emission Factor R	
PM10			1.1	lb/ton	**55.00**	**240.90**	AP 42 Table 11.12-2 Uncontrolled Emission Factor R	
PM2.5			1.1	lb/ton	**55.00**	**240.90**	AP 42 Table 11.12-2 Uncontrolled Emission Factor R	
SO2								

Formula for Uncontrolled Limit (lb/hr):

Controlled

Pollutant	Controlled Factor Factor	Unit	Controlled Factor (%Control) Factor	Unit	Emission Limit lb/hr	ton/yr	Emission Limit (%Control) lb/hr	ton/yr	Reference	Notes
PM	0.0089	lb/ton	3.14	lb/ton	**0.45**	**1.95**	**157.00**	**687.66**	AP 42 Table 11.1	
PM10	0.0049	lb/ton	1.1	lb/ton	**0.25**	**1.07**	**55.00**	**240.90**	AP 42 Table 11.1	
PM2.5	0.0049	lb/ton	1.1	lb/ton	**0.25**	**1.07**	**55.00**	**240.90**	AP 42 Table 11.1	
SO2										

Formula for Controlled Limit(lb/hr):

IV. Emission Limit Calculations (continued):

Federal Requirements: 40 CFR Part 60 (NSPS), Part 63 (NESHAPS), Part 76 (Acid Rain), and 40 CFR Part 64 (CAM)

Pollutant	Other Emission Factor Factor	Unit	Actual Emission Factor Factor	Unit	lb/hr	ton/yr	40 CFR Part 64 >100 ton/yr?	CAM Required?	Reference	Notes
PM							YES	YES		
PM10							YES	YES		
PM2.5							YES	YES		
SO2							NO	NO		
SO2							NO	NO		
NOX							NO	NO		
NOX							NO	NO		
CO							NO	NO		
NOX + CO										
VOC							NO	NO		
Pb							NO	NO		
Hg							NO	NO		
H2S							NO	NO		
HAPS										
Opacity										
Other										

Remember CAM is only required for Class 1 Facilities that have a unit with a control, a pre-control tpy value > 100, do not have a CEMs or Acid Rain requirement.
Formula for Limit(lb/hr):

State Requirements: Maximum Allowables (Formulas subject to change with Heat Input Rate)

Federally Enforceable SIPS		Formula(s) Where X=	Where Y=	Y	Unit	Where P=	Where E=	E	Units
NAC 445B.2203	PM10	NA	NA	**NA**					
NAC 445B.22047	Sulfur	NA	NA	**NA**					
NAC 445B.22033	PM10					50.000	(55 * [50]^0.11) - 40	**44.58**	**lbs/hr**
NAC 445B.22017	Opacity								

Permitted Emission Limits

Pollutant	Emission Factor Factor	Unit	lb/hr	ton/yr	Reference	Notes	Compare to Source Testing Factor	Unit	lb/hr	ton/yr
PM	**0.0089**	**lb/ton**	**0.45**	**1.95**	**Rating for Cemer**					
PM10	**0.0049**	**lb/ton**	**0.25**	**1.07**	**Rating for Cemer**					
PM2.5	**0.0049**	**lb/ton**	**0.25**	**1.07**	**Rating for Cemer**					

V. Green House Gases

	Factor	Unit	lb/hr	ton/yr	GWP Multiplier	GWP lb/hr	GWP ton/yr	Reference	Using Source Testing GWP lb/hr	GWP ton/yr
CO2		lb/MMBtu			1					
CH4		lb/MMBtu			21					
N2O		lb/MMBtu			310					

TOTAL CO2e:

VI. Hazardous Air Pollutants:

Hazardous Air Pollutants

HAP Pollutant	Uncontrolled Factor	Unit	Controlled Factor	Unit	Uncontrolled Emission (lb/hr)	Emission (ton/yr)	Controlled Emission (lb/hr)	Emission (ton/yr)	Removal Factor	Calculation Reference
TOTALS:										

Nevada Division of Environmental Protection
Bureau of Air Pollution Control

POLLUTANTS

EMISSIONS CALCULATIONS

FIN: A0003 | Permit Number: AP 1041-0723.02

Facility Name: Newmont Mining Corporation
Project Name: Twin Creeks
System: Lime/Cement/Flyash Silo Discharge into Hopper

By: Eric Hasty | Date: 8/23/2013
Air Case:7452
Minor Revision of a Class I Air Quality Operating Permit
TYPE OF AP XXXX
TYPE OF AP XXXX
TYPE OF AP XXXX

	YES/NO	Notes: (Include sys in the PTE -example: CAP Limit or Alternative Scenario) (Revision - Date (Mo/Year) of issuance)
Include sys in the PTE?	Yes	
Revision?	Yes	

Approved: | Date:

I. EMISSION UNIT(S):

System	S2.XXX/ PF1.XXX	Description	Location UTM NAD 83 (m) North	East	Manufacturer	Model #	Serial #	SCC #	Year Manufactured
32B	PF1.032	Lime/Cement/FlyashSilo Discharge to Hopper	4,570,624	486,257	NA	NA	NA	3-05-011-08	

II. CONTROL DEVICE(S):

Stack Parameters
Height (ft):
Diameter (ft):
Temp (°F):
Exit Vel (fps):
Vol (ACFM):
Vol (DSCFM):

Pollutant	Control(s) Type	Control (%)	Manufacturer's Guarantee Factor	Unit	Notes
PM	Enclosure	50.0%			
PM10	Enclosure	50.0%			
PM2.5	Enclosure	50.0%			
SO2					
NOX					
CO					
VOC					
Pb					
Hg					
H2S					
HAPS					

III. Operating Parameters:

Operating Hours hr/day	hr/yr	Throughput/Fuel Usage Hourly	Annual	Unit	Heat Input (MMBtu) Fuel Type	Hourly	Annual	Power Output Hourly	Unit	Heat Content
24	8,760	13.6	19,416.0	tons						

Note: The Conversion section is used for calculating to and from throughput/fuel usage and heat input using heat content values. See below for typical values.

	Coal (BTU/lb)	Diesel (BTU/gal)	Gasoline (BTU/gal)	Natural Gas (BTU/scf)	Propane (BTU/gallon)
Default	13,000	140,000	114,000	1,020	90,500

If used a formula to calculate: TYPE FORMULA

IV. Emission Limit Calculations:

Uncontrolled

Pollutant	Other Emission Factor Factor	Unit	Actual Emission Factor Factor	Unit	Emission Limit lb/hr	ton/yr	Reference	Notes
PM			0.0048	lb/ton	**0.07**	**0.05**	AP 42 Table 11.12-2 Uncontrolled Emission Factor	
PM10			0.0028	lb/ton	**0.04**	**0.03**	AP 42 Table 11.12-2 Uncontrolled Emission Factor	
PM2.5			0.0028	lb/ton	**0.04**	**0.03**	AP 42 Table 11.12-2 Uncontrolled Emission Factor	
SO2								

Formula for Uncontrolled Limit (lb/hr):

Controlled

Pollutant	Controlled Factor Factor	Unit	Controlled Factor (%Control) Factor	Unit	Emission Limit lb/hr	ton/yr	Emission Limit (%Control) lb/hr	ton/yr	Reference	Notes
PM			0.0024	lb/ton			**0.03**	**0.02**	AP 42 Table 11.1	
PM10			0.0014	lb/ton			**0.02**	**0.01**	AP 42 Table 11.1	
PM2.5			0.0014	lb/ton			**0.02**	**0.01**	AP 42 Table 11.1	
SO2										

Formula for Controlled Limit(lb/hr):

IV. Emission Limit Calculations (continued):

Federal Requirements: 40 CFR Part 60 (NSPS), Part 63 (NESHAPS), Part 76 (Acid Rain), and 40 CFR Part 64 (CAM)

Pollutant	Other Emission Factor Factor	Unit	Actual Emission Factor Factor	Unit	lb/hr	ton/yr	40 CFR Part 64 >100 ton/yr?	CAM Required?	Reference	Notes
PM							NO	NO		
PM10							NO	NO		
PM2.5							NO	NO		
SO2							NO	NO		
SO2							NO	NO		
NOX							NO	NO		
NOX							NO	NO		
CO							NO	NO		
NOX + CO										
VOC							NO	NO		
Pb							NO	NO		
Hg							NO	NO		
H2S							NO	NO		
HAPS										
Opacity										
Other										

Remember CAM is only required for Class 1 Facilities that have a unit with a control, a pre-control tpy value > 100, do not have a CEMs or Acid Rain requirement.
Formula for Limit(lb/hr):

State Requirements: Maximum Allowables (Formulas subject to change with Heat Input Rate)

Federally Enforceable SIPS		Formula(s) Where X=	Where Y=	Y	Unit	Where P=	Where E=	E	Units
NAC 445B.2203	PM10	NA	NA	**NA**					
NAC 445B.22047	Sulfur	NA	NA	**NA**					
NAC 445B.22033	PM10					13.550	4.10 * [13.55] ^ 0.67	**23.51**	**lbs/hr**
NAC 445B.22017	Opacity								

Permitted Emission Limits

Pollutant	Emission Factor Factor	Unit	lb/hr	ton/yr	Reference	Notes	Compare to Source Testing Factor	Unit	lb/hr	ton/yr
PM	**0.0024**	**lb/ton**	**0.033**	**0.023**	**Emission Factor**					
PM10	**0.0014**	**lb/ton**	**0.019**	**0.014**	**Emission Factor**					
PM2.5	**0.0014**	**lb/ton**	**0.019**	**0.014**	**Emission Factor**					

V. Green House Gases

	Factor	Unit	lb/hr	ton/yr	GWP Multiplier	GWP lb/hr	GWP ton/yr	Reference	Using Source Testing GWP lb/hr	GWP ton/yr
CO2		lb/MMBtu			1					
CH4		lb/MMBtu			21					
N2O		lb/MMBtu			310					

TOTAL CO2e:

VI. Hazardous Air Pollutants:

Hazardous Air Pollutants

HAP Pollutant	Uncontrolled Factor	Unit	Controlled Factor	Unit	Uncontrolled Emission (lb/hr)	Emission (ton/yr)	Controlled Emission (lb/hr)	Emission (ton/yr)	Removal Factor	Calculation Reference
TOTALS:										

Nevada Division of Environmental Protection
Bureau of Air Pollution Control

POLLUTANTS

EMISSIONS CALCULATIONS

FIN: A0003 Permit Number: AP 1041-0723.02

Facility Name: Newmont Mining Corporation
Project Name: Twin Creeks
System: Aggregate Loading into Hopper

By: Eric Hasty
Date: 8/23/2013
Air Case:7452

Minor Revision of a Class I Air Quality Operating Permit
TYPE OF AP XXXX
TYPE OF AP XXXX
TYPE OF AP

	YES/NO	Notes: (Include sys in the PTE -example: CAP Limit or Alternative Scenario) (Revision - Date (Mo/Year) of issuance)
Include sys in the PTE?	Yes	
Revision?	Yes	

Approved: Date:

I. EMISSION UNIT(S):

System	S2.XXX/ PF1.XXX	Description	Location UTM NAD 83 (m) North	East	Manufacturer	Model #	Serial #	SCC #	Year Manufactured
32C	PF1.033	Aggregate Loading into Hopper	4,570,624	486,257	NA	NA	NA	3-05-011-06	

II. CONTROL DEVICE(S):

Stack Parameters
Height (ft):
Diameter (ft):
Temp (°F):
Exit Vel (fps):
Vol (ACFM):
Vol (DSCFM):

Pollutant	Control(s) Type	Control (%)	Manufacturer's Guarantee Factor	Unit	Notes
PM	none				
PM10	none				
PM2.5	none				
SO2					
NOX					
CO					
VOC					
Pb					
Hg					
H2S					
HAPS					

III. Operating Parameters:

Operating Hours hr/day	hr/yr	Throughput/Fuel Usage Hourly	Annual	Unit	Heat Input (MMBtu) Fuel Type	Hourly	Annual	Power Output Hourly	Unit	Heat Content
24	8,760	27.0	21,600.0	tons						

Note: The Conversion section is used for calculating to and from throughput/fuel usage and heat input using heat content values. See below for typical values.

	Coal (BTU/lb)	Diesel (BTU/gal)	Gasoline (BTU/gal)	Natural Gas (BTU/scf)	Propane (BTU/gallon)
Default	13,000	140,000	114,000	1,020	90,500

If used a formula to calculate: TYPE FORMULA

IV. Emission Limit Calculations:

Uncontrolled

Pollutant	Other Emission Factor Factor	Unit	Actual Emission Factor Factor	Unit	Emission Limit lb/hr	ton/yr	Reference	Notes
PM			0.0069	lb/ton	**0.186**	**0.075**	AP 42 Table 11.12-2 Uncontrolled Emission Factor R	
PM10			0.0033	lb/ton	**0.089**	**0.036**	AP 42 Table 11.12-2 Uncontrolled Emission Factor R	
PM2.5			0.0033	lb/ton	**0.089**	**0.036**	AP 42 Table 11.12-2 Uncontrolled Emission Factor R	
SO2								

Formula for Uncontrolled Limit (lb/hr):

Controlled

Pollutant	Controlled Factor Factor	Unit	Controlled Factor (%Control) Factor	Unit	Emission Limit lb/hr	ton/yr	Emission Limit (%Control) lb/hr	ton/yr	Reference	Notes
PM			0.0069	lb/ton			**0.186**	**0.075**	AP 42 Table 11.1	
PM10			0.0033	lb/ton			**0.089**	**0.036**	AP 42 Table 11.1	
PM2.5			0.0033	lb/ton			**0.089**	**0.036**	AP 42 Table 11.1	
SO2										
NOX										
CO										
VOC										
Pb										
Hg										
H2S										

Formula for Controlled Limit(lb/hr):

IV. Emission Limit Calculations (continued):

Federal Requirements: 40 CFR Part 60 (NSPS), Part 63 (NESHAPS), Part 76 (Acid Rain), and 40 CFR Part 64 (CAM)

Pollutant	Other Emission Factor Factor	Unit	Actual Emission Factor Factor	Unit	lb/hr	ton/yr	40 CFR Part 64 >100 ton/yr?	CAM Required?	Reference	Notes
PM							NO	NO		
PM10							NO	NO		
PM2.5							NO	NO		
SO2							NO	NO		
SO2							NO	NO		
NOX							NO	NO		
NOX							NO	NO		
CO							NO	NO		
NOX + CO										
VOC							NO	NO		
Pb							NO	NO		
Hg							NO	NO		
H2S							NO	NO		
HAPS										
Opacity										
Other										

Remember CAM is only required for Class 1 Facilities that have a unit with a control, a pre-control tpy value > 100, do not have a CEMs or Acid Rain requirement.
Formula for Limit(lb/hr):

State Requirements: Maximum Allowables (Formulas subject to change with Heat Input Rate)

Federally Enforceable SIPS		Formula(s) Where X=	Where Y=	Y	Unit	Where P=	Where E=	E	Units
NAC 445B.2203	PM10	NA	NA	**NA**					
NAC 445B.22047	Sulfur	NA	NA	**NA**					
NAC 445B.22033	PM10					27.000	4.10 * [27] ^ 0.67	**37.31**	**lbs/hr**
NAC 445B.22017	Opacity								

Permitted Emission Limits

Pollutant	Emission Factor Factor	Unit	lb/hr	ton/yr	Reference	Notes	Compare to Source Testing Factor	Unit	lb/hr	ton/yr
PM	**0.0069**	**lb/ton**	**0.186**	**0.075**	**ed Emission Fact**					
PM10	**0.0033**	**lb/ton**	**0.089**	**0.036**	**ed Emission Fact**					
PM2.5	**0.0033**	**lb/ton**	**0.089**	**0.036**	**ed Emission Fact**					

V. Green House Gases

	Factor	Unit	lb/hr	ton/yr	GWP Multiplier	GWP lb/hr	GWP ton/yr	Reference	Using Source Testing GWP lb/hr	GWP ton/yr
CO2		lb/MMBtu			1					
CH4		lb/MMBtu			21					
N2O		lb/MMBtu			310					
					TOTAL CO2e:					

VI. Hazardous Air Pollutants:

Hazardous Air Pollutants

HAP Pollutant	Uncontrolled Factor	Unit	Controlled Factor	Unit	Uncontrolled Emission (lb/hr)	Emission (ton/yr)	Controlled Emission (lb/hr)	Emission (ton/yr)	Removal Factor	Calculation Reference
TOTALS:										

Nevada Division of Environmental Protection
Bureau of Air Pollution Control

POLLUTANTS

EMISSIONS CALCULATIONS

FIN: A0003 | Permit Number: AP 1041-0723.02

Facility Name: Newmont Mining Corporation
Project Name: Twin Creeks
System: Aggregate Transfer to Mixing Hopper

By: Eric Hasty | Date: 8/23/2013
Air Case:7452
Minor Revision of a Class I Air Quality Operating Permit
TYPE OF AP XXXX
TYPE OF AP XXXX
TYPE OF AP

	YES/NO	Notes: (Include sys in the PTE -example: CAP Limit or Alternative Scenario) (Revision - Date (Mo/Year) of issuance)
Include sys in the PTE?	Yes	
Revision?	Yes	

Approved: | Date:

I. EMISSION UNIT(S):

System	S2.XXX/ PF1.XXX	Description	Location UTM NAD 83 (m) North	East	Manufacturer	Model #	Serial #	SCC #	Year Manufactured
32D	PF1.034	Aggregate Transfer into Mixing Hopper	4,570,624	486,257	NA	NA	NA	3-05-011-06	

II. CONTROL DEVICE(S):

Stack Parameters
Height (ft):
Diameter (ft):
Temp (°F):
Exit Vel (fps):
Vol (ACFM):
Vol (DSCFM):

Pollutant	Control(s) Type	Control (%)	Manufacturer's Guarantee Factor	Unit	Notes
PM	Enclosure	50.0%			
PM10	Enclosure	50.0%			
PM2.5	Enclosure	50.0%			
SO2					
NOX					
CO					
VOC					
Pb					
Hg					
H2S					
HAPS					

III. Operating Parameters:

Operating Hours hr/day	hr/yr	Throughput/Fuel Usage Hourly	Annual	Unit	Heat Input (MMBtu) Fuel Type	Hourly	Annual	Power Output Hourly	Unit	Heat Content
24	8,760	27.0	21,600.0	tons						

Note: The Conversion section is used for calculating to and from throughput/fuel usage and heat input using heat content values. See below for typical values.

	Coal (BTU/lb)	Diesel (BTU/gal)	Gasoline (BTU/gal)	Natural Gas (BTU/scf)	Propane (BTU/gallon)
Default	13,000	140,000	114,000	1,020	90,500

If used a formula to calculate: TYPE FORMULA

IV. Emission Limit Calculations:

Uncontrolled

Pollutant	Other Emission Factor Factor	Unit	Actual Emission Factor Factor	Unit	Emission Limit lb/hr	ton/yr	Reference	Notes
PM			0.0069	lb/ton	**0.186**	**0.075**	AP 42 Table 11.12-2 Uncontrolled Emission Factor	
PM10			0.0033	lb/ton	**0.089**	**0.036**	AP 42 Table 11.12-2 Uncontrolled Emission Factor	
PM2.5			0.0033	lb/ton	**0.089**	**0.036**	AP 42 Table 11.12-2 Uncontrolled Emission Factor	
SO2								

Formula for Uncontrolled Limit (lb/hr):

Controlled

Pollutant	Controlled Factor Factor	Unit	Controlled Factor (%Control) Factor	Unit	Emission Limit lb/hr	ton/yr	Emission Limit (%Control) lb/hr	ton/yr	Reference	Notes
PM			0.00345	lb/ton			**0.093**	**0.037**	AP 42 Table 11.1	
PM10			0.00165	lb/ton			**0.045**	**0.018**	AP 42 Table 11.1	
PM2.5			0.00165	lb/ton			**0.045**	**0.018**	AP 42 Table 11.1	
SO2										

Formula for Controlled Limit(lb/hr):

IV. Emission Limit Calculations (continued):

Federal Requirements: 40 CFR Part 60 (NSPS), Part 63 (NESHAPS), Part 76 (Acid Rain), and 40 CFR Part 64 (CAM)

Pollutant	Other Emission Factor Factor	Unit	Actual Emission Factor Factor	Unit	lb/hr	ton/yr	40 CFR Part 64 >100 ton/yr?	CAM Required?	Reference	Notes
PM							NO	NO		
PM10							NO	NO		
PM2.5							NO	NO		
SO2							NO	NO		
SO2							NO	NO		
NOX							NO	NO		
NOX							NO	NO		
CO							NO	NO		
NOX + CO										
VOC							NO	NO		
Pb							NO	NO		
Hg							NO	NO		
H2S							NO	NO		
HAPS										
Opacity										
Other										

Remember CAM is only required for Class 1 Facilities that have a unit with a control, a pre-control tpy value > 100, do not have a CEMs or Acid Rain requirement.
Formula for Limit(lb/hr):

State Requirements: Maximum Allowables (Formulas subject to change with Heat Input Rate)

Federally Enforceable SIPS		Formula(s) Where X=	Where Y=	Y	Unit	Where P=	Where E=	E	Units
NAC 445B.2203	PM10	NA	NA	**NA**					
NAC 445B.22047	Sulfur	NA	NA	**NA**					
NAC 445B.22033	PM10					27.000	4.10 * [27] ^ 0.67	**37.31**	**lbs/hr**
NAC 445B.22017	Opacity								

Permitted Emission Limits

Pollutant	Emission Factor Factor	Unit	lb/hr	ton/yr	Reference	Notes	Compare to Source Testing Factor	Unit	lb/hr	ton/yr
PM	**0.00345**	**lb/ton**	**0.093**	**0.037**	**d Emission Facto**					
PM10	**0.00165**	**lb/ton**	**0.045**	**0.018**	**d Emission Facto**					
PM2.5	**0.00165**	**lb/ton**	**0.045**	**0.018**	**d Emission Facto**					

V. Green House Gases

	Factor	Unit	lb/hr	ton/yr	GWP Multiplier	GWP lb/hr	GWP ton/yr	Reference	Using Source Testing GWP lb/hr	GWP ton/yr
CO2		lb/MMBtu			1					
CH4		lb/MMBtu			21					
N2O		lb/MMBtu			310					

TOTAL CO2e:

VI. Hazardous Air Pollutants:

Hazardous Air Pollutants

HAP Pollutant	Uncontrolled Factor	Unit	Controlled Factor	Unit	Uncontrolled Emission (lb/hr)	Emission (ton/yr)	Controlled Emission (lb/hr)	Emission (ton/yr)	Removal Factor	Calculation Reference
TOTALS:										

Nevada Division of Environmental Protection
Bureau of Air Pollution Control

POLLUTANTS

EMISSIONS CALCULATIONS

FIN: A0003 | Permit Number: AP 1041-0723.02

Facility Name: Newmont Mining Corporation
Project Name: Twin Creeks
System: Lime/Cement/Flyash Loading into Mixing Hopper

By: Eric Hasty | Date: 8/23/2013
Air Case:7452
Minor Revision of a Class I Air Quality Operating Permit
TYPE OF AP XXXX
TYPE OF AP XXXX
TYPE OF AP

	YES/NO	Notes: (Include sys in the PTE -example: CAP Limit or Alternative Scenario) (Revision - Date (Mo/Year) of issuance)
Include sys in the PTE?	Yes	
Revision?	Yes	

Approved: | Date:

I. EMISSION UNIT(S):

System	S2.XXX/ PF1.XXX	Description	Location UTM NAD 83 (m) North	East	Manufacturer	Model #	Serial #	SCC #	Year Manufactured
32E	PF1.035	Lime/Cement/Flyash into Mixing Hopper	4,570,624	486,257	NA	NA	NA	3-05-011-09	

II. CONTROL DEVICE(S):

Stack Parameters
Height (ft):
Diameter (ft):
Temp (°F):
Exit Vel (fps):
Vol (ACFM):
Vol (DSCFM):

Pollutant	Control(s) Type	Control (%)	Manufacturer's Guarantee Factor	Unit	Notes
PM	nclosed Feed Auger		0.0184	lb/ton	led Emission Factor Rating for Mixer Loadi
PM10	nclosed Feed Auger		0.0055	lb/ton	led Emission Factor Rating for Mixer Loadi
PM2.5	nclosed Feed Auger		0.0055	lb/ton	led Emission Factor Rating for Mixer Loadi
SO2					
NOX					
CO					
VOC					
Pb					
Hg					
H2S					
HAPS					

III. Operating Parameters:

Operating Hours hr/day	hr/yr	Throughput/Fuel Usage Hourly	Annual	Unit	Heat Input (MMBtu) Fuel Type	Hourly	Annual	Power Output Hourly	Unit	Heat Content
24	8,760	13.6	19,416.0	tons						

Note: The Conversion section is used for calculating to and from throughput/fuel usage and heat input using heat content values. See below for typical values.

	Coal (BTU/lb)	Diesel (BTU/gal)	Gasoline (BTU/gal)	Natural Gas (BTU/scf)	Propane (BTU/gallon)
Default	13,000	140,000	114,000	1,020	90,500

If used a formula to calculate: TYPE FORMULA

IV. Emission Limit Calculations:

Uncontrolled

Pollutant	Other Emission Factor Factor	Unit	Actual Emission Factor Factor	Unit	Emission Limit lb/hr	ton/yr	Reference	Notes
PM			0.572	lb/ton	**7.75**	**5.55**	AP 42 Table 11.12-2 Uncontrolled Emission Factor	
PM10			0.156	lb/ton	**2.11**	**1.51**	AP 42 Table 11.12-2 Uncontrolled Emission Factor	
PM2.5			0.156	lb/ton	**2.11**	**1.51**	AP 42 Table 11.12-2 Uncontrolled Emission Factor	
SO2								

Formula for Uncontrolled Limit (lb/hr):

Controlled

Pollutant	Controlled Factor Factor	Unit	Controlled Factor (%Control) Factor	Unit	Emission Limit lb/hr	ton/yr	Emission Limit (%Control) lb/hr	ton/yr	Reference	Notes
PM	0.0184	lb/ton	0.572	lb/ton	**0.249**	**0.179**	**7.751**	**5.553**	AP 42 Table 11.1	
PM10	0.0055	lb/ton	0.156	lb/ton	**0.075**	**0.053**	**2.114**	**1.514**	AP 42 Table 11.1	
PM2.5	0.0055	lb/ton	0.156	lb/ton	**0.075**	**0.053**	**2.114**	**1.514**	AP 42 Table 11.1	
SO2										

Formula for Controlled Limit(lb/hr):

IV. Emission Limit Calculations (continued):

Federal Requirements: 40 CFR Part 60 (NSPS), Part 63 (NESHAPS), Part 76 (Acid Rain), and 40 CFR Part 64 (CAM)

Pollutant	Other Emission Factor Factor	Unit	Actual Emission Factor Factor	Unit	lb/hr	ton/yr	40 CFR Part 64 >100 ton/yr?	CAM Required?	Reference	Notes
PM							NO	NO		
PM10							NO	NO		
PM2.5							NO	NO		
SO2							NO	NO		
SO2							NO	NO		
NOX							NO	NO		
NOX							NO	NO		
CO							NO	NO		
NOX + CO										
VOC							NO	NO		
Pb							NO	NO		
Hg							NO	NO		
H2S							NO	NO		
HAPS										
Opacity										
Other										

Remember CAM is only required for Class 1 Facilities that have a unit with a control, a pre-control tpy value > 100, do not have a CEMs or Acid Rain requirement.
Formula for Limit(lb/hr):

State Requirements: Maximum Allowables (Formulas subject to change with Heat Input Rate)

Federally Enforceable SIPS		Formula(s) Where X=	Where Y=	Y	Unit	Where P=	Where E=	E	Units
NAC 445B.2203	PM10	NA	NA	**NA**					
NAC 445B.22047	Sulfur	NA	NA	**NA**					
NAC 445B.22033	PM10					13.550	4.10 * [13.55] ^ 0.67	**23.51**	**lbs/hr**
NAC 445B.22017	Opacity								

Permitted Emission Limits

Pollutant	Emission Factor Factor	Unit	lb/hr	ton/yr	Reference	Notes	Compare to Source Testing Factor	Unit	lb/hr	ton/yr
PM	**0.0184**	**lb/ton**	**0.249**	**0.179**	**ed Emission Fact**					
PM10	**0.0055**	**lb/ton**	**0.075**	**0.053**	**ed Emission Fact**					
PM2.5	**0.0055**	**lb/ton**	**0.075**	**0.053**	**ed Emission Fact**					

V. Green House Gases

	Factor	Unit	lb/hr	ton/yr	GWP Multiplier	GWP lb/hr	GWP ton/yr	Reference	Using Source Testing GWP lb/hr	GWP ton/yr
CO2		lb/MMBtu			1					
CH4		lb/MMBtu			21					
N2O		lb/MMBtu			310					

TOTAL CO2e:

VI. Hazardous Air Pollutants:

Hazardous Air Pollutants

HAP Pollutant	Uncontrolled Factor	Unit	Controlled Factor	Unit	Uncontrolled Emission (lb/hr)	Emission (ton/yr)	Controlled Emission (lb/hr)	Emission (ton/yr)	Removal Factor	Calculation Reference
TOTALS:										

Appendix 2

Draft Minor Revision of a Class I Air Quality Operating Permit AP1041-0723.02

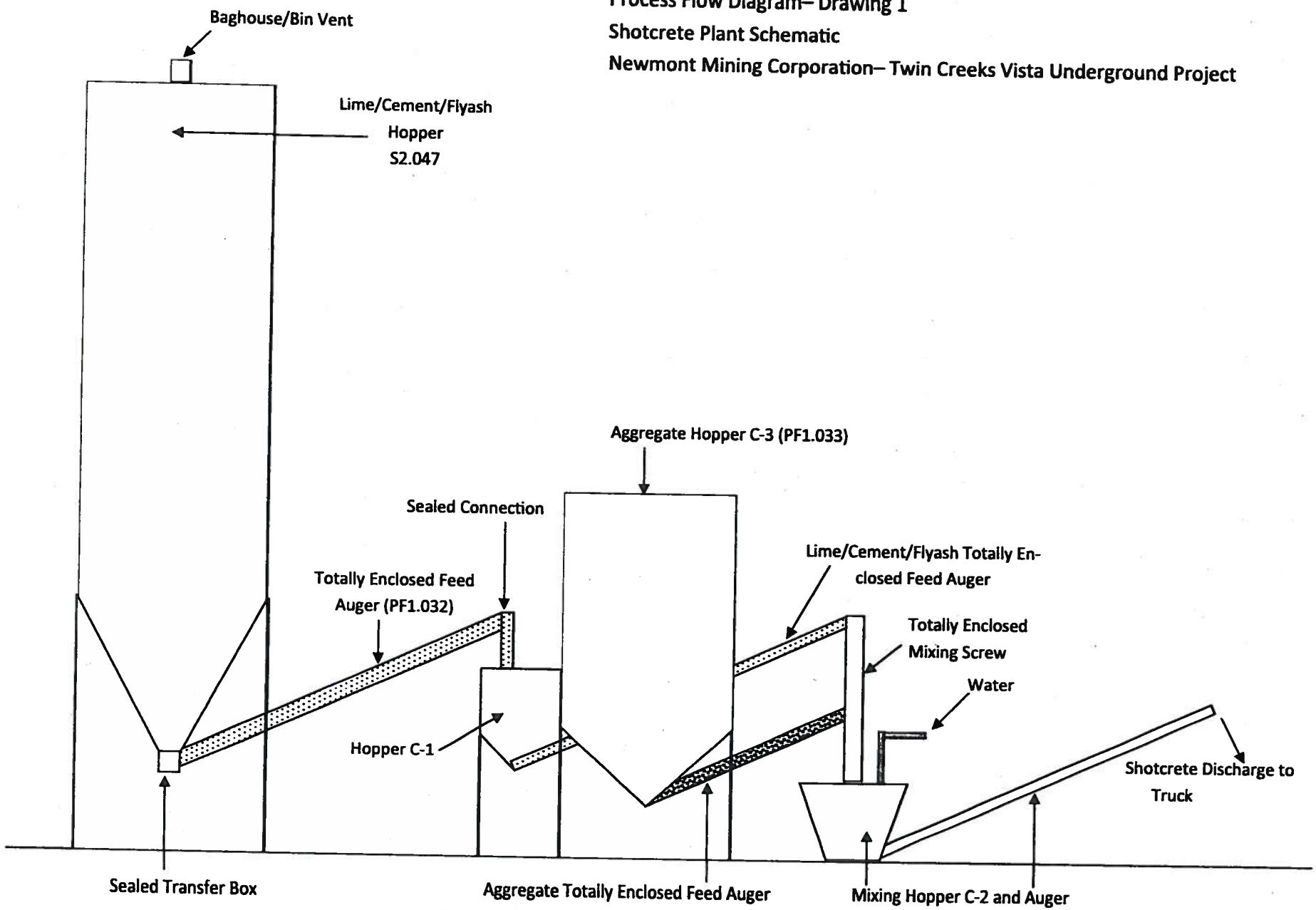
Appendix 3

Process Flow Diagram

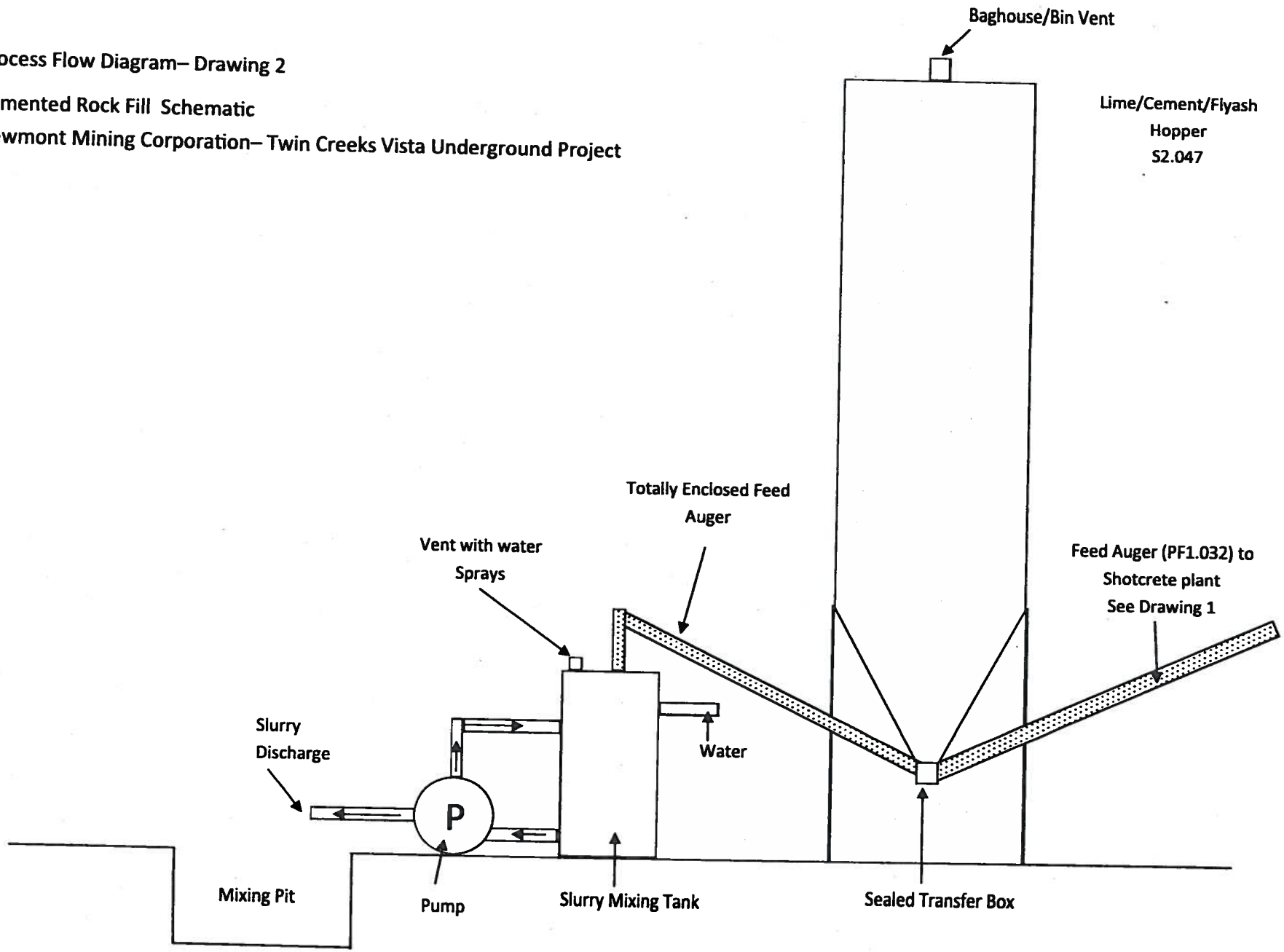
Process Flow Diagram– Drawing 1

Shotcrete Plant Schematic

Newmont Mining Corporation– Twin Creeks Vista Underground Project



Process Flow Diagram– Drawing 2

Cemented Rock Fill Schematic

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