APPENDIX A

Relevant Plans, Regulations, Executive Orders, and Manuals

Appendix A Relevant Plans, Regulations, Executive Orders, and Manuals

Bureau of Land Management (BLM). 1984. Proposed Egan Resource Management Plan and Final Environmental Impact Statement. Prepared by the U.S. Department of the Interior, Bureau of Land Management, Ely Field Office, Ely, Nevada. September 21, 1984.

Bureau of Land Management (BLM). 1986. Visual Resource Inventory Handbook: H-8410-1, U.S. Department of the Interior, Bureau of Land Management. January 17, 1986.

Bureau of Land Management (BLM). 1986. Visual Resource Contrast Rating Manual H-8431-1. U.S. Department of the Interior, Bureau of Land Management.

Bureau of Land Management (BLM). 1987. Egan Resource Management Plan and Final Environmental Impact Statement, and the Egan Resource Area Record of Decision. U.S. Department of the Interior, Bureau of Land Management, Ely District Office, Nevada. Record of Decision submitted February 3, 1987.

Bureau of Land Management (BLM). 1990. Instruction Memorandum No. NV-90-435, Cumulative Impact Analysis, U.S. Department of the Interior, Bureau of Land Management, Nevada State Office. September 27, 1990.

Bureau of Land Management (BLM). 1991. Nevada State Office, Nevada Cyanide Management Plan. U.S. Department of the Interior, Bureau of Land Management. August 22, 1991.

Bureau of Land Management (BLM). 1992. U.S. Department of the Interior, Bureau of Land Management Manual 9015-Integrated Weed Management. December 2, 1992.

Bureau of Land Management (BLM). 1995. Programmatic Agreement Among the Bureau of Land Management, Ely District, Nevada, Nevada State Historic Preservation Office, and The Advisory Council On Historic Preservation Regarding the Treatment of Historic Properties During Mineral Development in the Bald Mountain Mining District By Bald Mountain Mine. On file at the Bureau of Land Management Ely Field Office, Ely, Nevada.

Bureau of Land Management (BLM). 1997. Northeastern Great Basin Resource Advisory Council Standards and Guidelines. U.S. Department of the Interior, Bureau of Land Management. February 12, 1997.

Bureau of Land Management (BLM). 1998. Visual Resource Management Policy Restatement, Information Bulletin No. 98-135. May 22, 1998.

Bureau of Land Management (BLM). 1998. Visual Resource Management Policy Restatement, Information Memorandum No. 98-164. September 8, 1998

Bureau of Land Management (BLM). 2000. Ely District Managed Natural and Prescribed Fire Plans. U.S. Department of the Interior, Bureau of Land Management, Ely District Office, Ely, Nevada. November 17, 2000.

Bureau of Land Management (BLM). 2001. Instruction Memorandum No. NV-040-2001-02, Ely District Policy Management Actions for the Conservation of Migratory Birds. To Bureau of Land Management employees, Ely Field Office, from Field Manager, Ely. May 23, 2001.

Bureau of Land Management (BLM). 2004. Management Guidelines for Sage Grouse and Sagebrush Ecosystems in Nevada. Greater Sage Grouse Conservation Plan for Nevada and Eastern California. Prepared for Nevada Governor Kenny C. Guinn, Sage Grouse Conservation Team. First Edition. June 30, 2004.

Bureau of Land Management (BLM). 2004. Bald Mountain Exploration Program. Programmatic Environmental Assessment. NV040-04-023.

Bureau of Land Management (BLM). 2004. Historic Landscape Management Along National Historic Trails. Instruction Memorandum No. NV-2004-004. Nevada State Office, Reno, Nevada.

Bureau of Land Management (BLM). 2005. State Protocol Agreement (as amended through January 2005) Between the Bureau of Land Management, State of Nevada, and the Nevada State Historic Preservation Office.

Bureau of Land Management (BLM). 2008. National Environmental Policy Act Handbook. BLM Handbook H-1790-1. January 2008.

Council on Environmental Quality. Regulations for Implementing the National Environmental Policy Act. 40 Code of Federal Regulations parts 1500 through 1508.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations. Federal Register 59:32.

Executive Order 13045, Protection of Children from Environmental Risks and Safety. Federal Register 62:78.

Executive Order 13077, Indian Sacred Sites. Federal Register 63:48.

Executive Order 13112, Invasive Species. Federal Register 64:25.

Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds. Federal Register 66:11.

Executive Order 13443, Facilitation of Hunting Heritage and Wildlife Conservation. Federal Register 72:160.

Federal Highway Administration Highway Construction Noise Handbook. 2006. FHWA-HEP-06.015. August 2006.

National Environmental Policy Act. 42 United States Code Chapter 55 Sections 4321-4327.

National Park Service (NPS). 1999. Comprehensive Management and Use Plan Final Environmental Impact Statement, California National Historic Trail, Pony Express National Historic Trail. Management and Use Plan Update Final Environmental Impact Statement, Oregon National Historic Trail, Mormon Pioneer National Historic Trail. U.S. Department of the Interior, National Park Service, Long Distance Trails Office, Salt Lake City, Utah.

Nevada Department of Wildlife (NDOW). 2004. White Pine County Portion (Lincoln/White Pine Planning Area) Sage-Grouse Conservation Plan. Appendix Q of the Greater Sage Grouse Conservation Plan for Nevada and Eastern California. First Edition, June 30, 2004.

Nevada Department of Wildlife (NDOW). 2007. 2006-2007 Big Game Status Report.

Nevada Department of Wildlife (NDOW). 2007. 2006 Final Mule Deer Harvest by Hunt and Unit Group.

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Nevada Department of Wildlife (NDOW). 2007. Mule Deer Herd Prescription Management Area 22.

Nevada Department of Wildlife (NDOW). 2007. Management Plan for Mule Deer.

White Pine County. 1998. White Pine County Land Use Plan. Board of White Pine County Commissioners, Ely City Council, White Pine County Regional Planning Commission. May 1998.

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White Pine County. 2007. Elk Management Plan 2007 Revision.

U.S. Department of the Interior (USDI). 2008. Implementation of the National Environmental Policy Act of 1969; Final Rule. 43 Code of Federal regulations part 43.

U.S. Department of the Interior (USDI). 1976. Federal Land Policy and Management Act of 1976 (P.L. 94-578). Bureau of Land Management.

U.S. Department of the Interior (USDI). 1973. Endangered Species Act, 16 U.S.C. 1531-1544. U.S. Fish and Wildlife Service.

U.S. Department of the Interior (USDI). 1940. The Bald and Golden Eagle Protection Act, 16 U.S.C. 668-668C. U.S. Fish and Wildlife Service.

U.S. Department of the Interior (USDI). 1918. Migratory Bird Treaty Act of 1918, 16 U.S.C. 703-712. U.S. Fish and Wildlife Service.

U.S. Environmental Protection Agency (EPA). 1998. Final Guidance for Incorporating Environmental Justice Concerns in the U.S. Environmental Protection Agency's National Environmental Policy Act Compliance Analyses. Washington D.C. Available at http://www.epa.gov/compliance/resources/policies/ej/ej_guidance_nepa_epa0498.pdf

U.S. Environmental Protection Agency (EPA). 1981. Office of Noise Abatement and Control. Noise Effects Handbook EPA 500-9-82-106, National Association of Noise Control Officials, Fort Walton Beach, Florida.

APPENDIX B

Public Scoping Documents

Alternative, the BLM would not issue a ROW grant for the OP Pipeline. The project, including the pipeline, temporary access roads, and temporary use areas during construction, would not be approved or authorized as described in the ROW application. The BLM's preferred alternative is the Proposed Action Alternative. The Proposed Action Alternative analyzed in the DEIS reflects minor revisions to the original route as proposed by Overland Pass Company. The Southern Energy Corridor Alternative reflects the Green River Resource Management Plan's preferred locations for future proposed ROWS. Other alternatives, including transportation system alternatives and route variations, were considered, but not studied in detail.

The DEIS analyzes the potential environmental consequences of granting Overland Pass Company a ROW to construct an approximately 760-mile pipeline that would transport NGLs from Opal, Wyoming, to its terminus at the company's existing facilities in Conway, Kansas. The pipeline would be approximately 14 inches in diameter between Opal and Echo Springs, Wyoming, and 16 inches in diameter from Echo Springs, Wyoming, to Conway, Kansas.

As part of the proposed action, the OP Pipeline would be routed across southern Wyoming from Opal to Echo Springs along various existing utility or pipeline ROWs. From Echo Springs, the pipeline ROW would run in a southeasterly direction, paralleling the existing Southern Star Pipeline, and proceed to the south of Cheyenne, Wyoming, before entering Colorado. A major portion of the proposed route in Wyoming would cross public lands administered by the BLM.

From the Colorado border, the pipeline ROW would continue to parallel Southern Star Pipeline southeasterly crossing the Pawnee National Grassland, which is administered by the USDA Forest Service, and then into Kansas. From the Colorado-Kansas state line, the OP Pipeline would continue to run parallel to the Southern Star Pipeline to south of WaKeeney, Kansas. It would then follow an existing BP Amoco pipeline to Bushton, Kansas. From this point, the OP Pipeline would not parallel existing pipelines until reaching Mitchell, Kansas, where it would then follow an existing Williams Pipeline to the termination point at Conway, Kansas.

At Bushton and Conway, Kansas, the transported NGL would be processed at existing facilities and distributed through an existing transportation infrastructure to consumer markets in the Midwest and Texas Gulf of Mexico coast. About 82 percent of the proposed 760-mile pipeline would be co-located within existing pipeline ROW corridors. In addition to the pipeline, three electric pump stations would be needed to move the NGL at a maximum pressure of 1,440 pounds per square inch gauge (psig) through the pipeline. The pump stations are proposed to be located near Echo Springs and Laramie, Wyoming, and near WaKeeney, Kansas. The pipeline would have manual or self-actuating shut-off valves at regular intervals, as well as cleaning facilities and meter stations.

The OP Pipeline would be constructed and installed within a 75-foot-wide construction area. After construction and reclamation, the permanent ROW would be 50 feet wide, centered on the pipeline. All temporary workspace areas needed for construction activities outside the 50 foot wide permanent ROW would require Temporary Use Permits.

All comment submittals must include the commenter's name and street address. Comments, including the names and street addresses of respondent, will be available for public review at the Rawlins Field Office during its business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except for Federal holidays. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, be advised that your entire comment, including your personal identifying information may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

Dated: February 21, 2007.

Robert A. Bennett,

State Director.

[FR Doc. E7–5575 Filed 3–29–07; 8:45 am]

BILLING CODE 4310–22–P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[NV–040–07–5110–CF05 1990–EX–1990; N82888]

Notice of Intent To Prepare an Environmental Impact Statement for an Expansion of Mining Operations at Barrick Gold Corporation's Bald Mountain and Money Basin Mines, NV

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of Intent.

SUMMARY: In accordance with section 102(2)(c) of the National Environmental Policy Act of 1969 and 43 CFR part 3809, the Bureau of Land Management (BLM) Ely Field Office, Nevada intends to prepare an Environmental Impact Statement (EIS) for a proposed consolidation and expansion of the existing Plans of Operation for Barrick Gold Corporation's Bald Mountain Mine and Mooney Basin Mine located in White Pine County, Nevada. The two existing mines would be combined into one new expanded operation which would be called the North Operations Area. The EIS will analyze anticipated impacts of the expansion under this new consolidated Plan of Operation, and will incorporate analysis from a previous EIS and environmental assessments associate with the existing disturbance.

DATES: Publication of this notice initiates the public scoping process. Scoping meetings will be held in Ely, Elko, and Eureka, Nevada. All public meetings will be announced through local news media, newsletters or flyers, and will be posted on the BLM Web site, *http://www.nv.blm.gov/ely/2007_releases.htm* at least 15 days prior to each event.

The minutes and list of attendees for each meeting will be available to the public and open for 30 days after the meeting to any participants who wish to clarify the views they expressed. Comments and resource information should be submitted to the BLM within 30 days of publication of this notice in the **Federal Register**.

ADDRESSES: You may submit comments by any of the following methods:

- *E-mail: lynn_bjorklund@nv.glm.gov.*
- *Fax:* 775–189–1910.
- *Mail:* Bureau of Land Management, Ely Field Office, Attention: Lynn Bjorklund, HC33 Box 33500, Ely, Nevada, 89301.

Documents pertinent to this proposal may be examined at the Ely Field Office.

FOR FURTHER INFORMATION CONTACT: For further information and/or to have your name added to our mailing list, contact Lynn Bjorklund, Ely Field Office, at 775 289–1893 or by e-mail to *lynn_bjorklund@nv.blm.gov.*

SUPPLEMENTARY INFORMATION: Barrick Gold Corporation has submitted a proposal to expand and consolidate their existing Bald Mountain and Mooney Basin Mines, which are located approximately 65 air miles northwest of the town of Ely, Nevada. The project (consolidating the existing Bald Mountain Mine N–68193 and Mooney

Basin Mine N–46–94–010P into one unified operation called the North Operations Area) would consist of extending existing open pits, expanding existing rock disposal areas and heap leach facilities, construction of a truck shop, and continuing the operation, reclamation, and closure of the existing Bald Mountain Mine and Mooney Basin Mine operations (to include mine offices, truck shops/warehouse, haul roads, ore stockpiles, access roads, diversion ditches, power transmission lines, water wells and pipelines, process solution transmission pipelines and a landfill). This proposed expansion is entirely on unpatented mining claims on BLM-administered public land. Project access would continue to be via existing public roads. The projected life of the existing mine operation would increase approximately 10 years under this proposed project.

Under the proposed action, there would be an additional disturbance of 3,808 acres. The BLM previously authorized Barrick Gold Corporation to disturb 3,418 acres within the Bald Mountain Mine Plan boundary and 742 acres within the Mooney Basin Plan boundary (for a total of approximately 4,160 acres) associated with pits, rock disposal areas, heap leaching, roads, growth media stockpiles, exploration, and underground mining activities. The Proposed North Operations Area would include the 4,160 acres of previously permitted disturbance and 3,808 acres of new disturbance, for a final disturbance footprint of 7,968 acres. The North Operations Area EIS would incorporate existing analysis that includes several environmental assessments and the 1995 Bald Mountain Mine Expansion EIS.

Combining the Mooney Basin Mine and the Bald Mountain Mine into one project area would result in the new North Operations Area project boundary expanding to include an additional 3,738 acres of public land. The original boundaries of the two mines encompassed 12,737 acres of public land. The proposed project boundary for the North Operations Area would encompass 16,475 acres. These project boundaries define an area of potential operations although not all of the acreage within these boundaries would be disturbed.

The purpose of the public scoping process is to determine relevant issues that will influence the scope of the environmental analysis and EIS alternatives. Federal, state, and local agencies, and other individuals or organizations that may be interested in or affected by the BLM's decision on this Plan of Operations amendment are invited to participate in the scoping process. To be most helpful, you should submit formal scoping comments within 30 days after publication of this notice in the **Federal Register**.

Individual respondents may request confidentiality. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, be advised that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so. All submissions from organizations, businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses will be available for public inspection in their entirety. The minutes and list of attendees for each public meeting will be available to the public and open for 30 days after the meeting to any participants who wish to clarify the views they expressed. All comments will be available to the public for review at the Ely Field Office BLM throughout the EIS process.

Potentially significant direct, indirect, residual, and cumulative impacts from the proposed action will be analyzed in the EIS and will include wildlife, BLM sensitive species, socioeconomics, and cultural resources. Additional issues to be addressed may arise during the scoping process.

Dated: February 26, 2007.

John R. Ruhs,

Field Manager.

[FR Doc. 07–1589 Filed 3–29–07; 8:45 am]

BILLING CODE 4310–HC–M

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[CACA 14340]

Notice of Proposed Withdrawal Extension and Opportunity for Public Meeting; California

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice.

SUMMARY: The Forest Service has filed an application with the Bureau of Land Management (BLM) that proposes to extend the duration of Public Land Order (PLO) No. 6652 for an additional 20-year term. PLO No. 6652 withdrew 30 acres of National Forest System land from the mining laws, but not from other forms of disposition as may by law be authorized on National Forest System land or the mineral leasing laws to protect the Petersburg Administrative Site in Siskiyou County. This notice also gives an opportunity to comment on the proposed action and to request a public meeting.

DATES: Comments and requests for a public meeting must be received by June 28, 2007.

ADDRESSES: Comments and meeting requests should be sent to Duane Marti, BLM California State Office, 2800 Cottage Way, Sacramento, California 95825.

FOR FURTHER INFORMATION CONTACT: Duane Marti, BLM California State Office, (916) 978–4675, or at the above address and Jan Ford, Klamath National Forest, (530) 841–4483.

SUPPLEMENTARY INFORMATION: The withdrawal created by PLO No. 6652 (52 FR 27552) will expire on July 21, 2007, unless extended. The Forest Service has filed an application requesting the Secretary of the Interior to extend PLO No. 6652 for an additional 20-year term. The withdrawal was made to protect the Petersburg Administrative Site of the Forest Service on National Forest System land described as follows.

Klamath National Forest

Mount Diablo Meridian

T. 38 N., R. 11 W.,
Sec. 34, E½E½SW¼SW¼ and W½SE¼SW¼.

The area described contains 30 acres in Siskiyou County.

The purpose of the proposed extension is to continue the withdrawal created by PLO No. 6652 for an additional 20-year term to protect the Petersburg Administrative Site.

The use of a right-of-way, interagency, or cooperative agreement would not provide adequate protect of the Federal investment.

There are no suitable alternative sites as the land described contains permanent Federal facilities.

No additional water rights would be needed to fulfill the purpose of the requested withdrawal extension.

Records relating to the application may be examined by contacting Curt Hughes at the above address or 530–842–6131.

For a period of 90 days from the date of publication of this notice, all persons who wish to submit comments, suggestions, or objections in connection with the proposed extension may present their views in writing to the Forest Supervisor, Klamath National Forest, at the address noted above.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Ely Field Office
HC 33 Box 33500 (702 No. Industrial Way)
Ely, Nevada 89301-9408
http://www.nv.blm.gov/

In Reply Refer To:
380910 NV040
N82888

Dear Interested Public:

The Ely Field Office Bureau of Land Management (BLM), is asking for the public's input in the preparation of an Environmental Impact Statement (EIS) for the consolidation and expansion of the Bald Mountain and Mooney Basin Mines in White Pine County, Nevada. The two mines would be combined into one plan of operation called the North Operations Area and would include the proposed expansion of existing features. This project is more fully described in the accompanying project description.

The EIS will analyze the proposed actions/development projects to determine possible effects on the human environment and natural and cultural resources, and to determine what measures would be necessary to mitigate or reduce any impacts.

Three public scoping meetings will be held between 6:00 and 8:00 p.m. at locations within proximity to the Project Area. The open houses will include displays explaining the project and a forum for commenting on the project. The meeting will be held as follows:

Elko	**Eureka**	**Ely**
Monday, May 7	**Tuesday, May 8**	**Wednesday, May 9**
BLM Field Office	Eureka Opera House	BLM Field Office
3900 Idaho St.	31 South Main	701 North Industrial Way
Elko, Nevada	Eureka, Nevada	Ely, Nevada

If you would like to remain on the mailing list for this project, receive a copy of the EIS when it is completed, and be notified of future public meetings, please complete the enclosed comment form and return it to the BLM address shown.

The public scoping period for this project began on March 31 with the publication of the Notice of Intent in the Federal Register. It will conclude on May 25, 2007. You may direct questions and send written comments to:

Lynn Bjorklund,
Bureau of Land Management, Ely Field Office
HC 33 Box 33500,
Ely, Nevada 89301.
Phone 775-289-1893.

Sincerely,

John F. Ruhs
Field Manager
Ely Field Office

Enclosure: Project Description

Comments, including names, street addresses e-mail addresses, and phone numbers of respondents will be available for public review at the BLM Ely Field Office during regular business hours (7:30 a.m. to 4:30 p.m), Monday through Friday, except holidays. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that you entire comment – including you personal identifying information –may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from organizations, businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses will be available for public inspection in their entirety. The minutes and list of attendees for each public meeting will be available to the public and open for 30 days after the meeting to any participants who wish to clarify the views they expressed. All comments will be available to the public for review at the Ely Field Office BLM throughout the EIS process.

Project Description
North Operations Area EIS
Barrick Gold Corporation

Barrick Gold Corporation has submitted a proposal to expand and consolidate their existing Bald Mountain and Mooney Basin Mines, which are located approximately 65 air miles northwest of the town of Ely, Nevada. The project (consolidating the existing Bald Mountain Mine N-68193 and Mooney Basin Mine N-46-94-010P into one unified operation called the North Operations Area) would consist of extending existing open pits, expanding existing rock disposal areas and heap leach facilities, construction of a truck shop, and continuing the operation, reclamation, and closure of the existing Bald Mountain Mine and Mooney Basin Mine operations (to include mine offices, truck shops/warehouse, haul roads, ore stockpiles, access roads, diversion ditches, power transmission lines, water wells and pipelines, process solution transmission pipelines and a landfill). This proposed expansion is entirely on unpatented mining claims on BLM-administered public land. Project access would continue to be via existing public roads. The projected life of the existing mine operation would increase approximately 10 years under this proposed project.

Under the proposed action, there would be an additional disturbance of 3,808 acres. The BLM previously authorized Barrick Gold Corporation to disturb 3,418 acres within the Bald Mountain Mine Plan boundary and 742 acres within the Mooney Basin Plan boundary (for a total of approximately 4,160 acres) associated with pits, rock disposal areas, heap leaching, roads, growth media stockpiles, exploration, and underground mining activities. The Proposed North Operations Area would include the 4,160 acres of previously permitted disturbance and 3,808 acres of new disturbance, for a final disturbance footprint of 7,968 acres. The North Operations Area EIS would incorporate existing analysis that includes several environmental assessments and the 1995 Bald Mountain Mine Expansion EIS.

Combining the Mooney Basin Mine and the Bald Mountain Mine into one project area would result in the new North Operations Area project boundary expanding to include an additional 3,738 acres of public land. The original boundaries of the two mines encompassed 12,737 acres of public land. The proposed project boundary for the North Operations Area would encompass 16,475 acres. These project boundaries define an area of potential operations although not all of the acreage within these boundaries would be disturbed.

The purpose of the public scoping process is to determine relevant issues that will influence the scope of the environmental analysis and EIS alternatives. Federal, state, and local agencies, and other individuals or organizations that may be interested in or affected by the BLM's decision on this Plan of Operations amendment are invited to participate in the scoping process. You should submit formal scoping comments by May 25, 2007

Potentially significant direct, indirect, residual, and cumulative impacts from the proposed action will be analyzed in the EIS and will include wildlife, BLM sensitive species, socioeconomics, and cultural resources. Additional issues to be addressed may arise during the scoping process

Preliminary Resources Issues

The BLM will prepare an environmental Impact Statement (EIS) for this proposal. The EIS will address Project –induced impacts related to the following natural and human resources (not necessarily in order of importance):

Aesthetics (visual and noise);
Air quality;
Cultural resources
Native American concerns;
Environmental justice;
Geology and minerals;
Hazardous materials;
Invasive, nonnative species;
Land use and access;
Paleontological resources;
Range resources;
Recreation;
Social and economic values;
Soils;
Special status plant and animal species;
Vegetation resources;
Water quality and quantity;
Wetland/Riparian Zones and Waters of the United States (U.S.);
Wild horses; and
Wildlife (including Migratory Birds).

Staying Informed and Involved

Information notices will be printed in the local newspapers and released to other news media informing the public of comment periods associated with scoping this Project and the release of the Draft EIS and Final EIS. Date, time, and location of these public meetings/open houses will be published in area newspapers.

The BLM will also develop a mailing list for this Project. Those persons and agencies on the mailing list will be contacted from time to time during the Project to provide status updates on the Project and distribute copies of the EIS. Persons wishing to be included in the mailing list may contact the Project contact shown below.

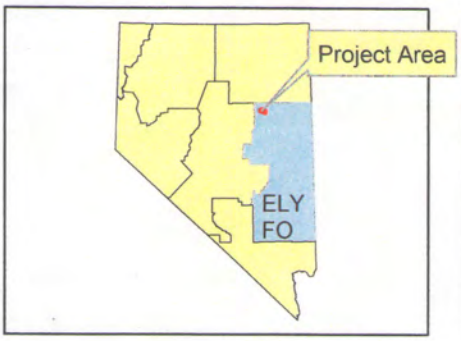
How to Comment

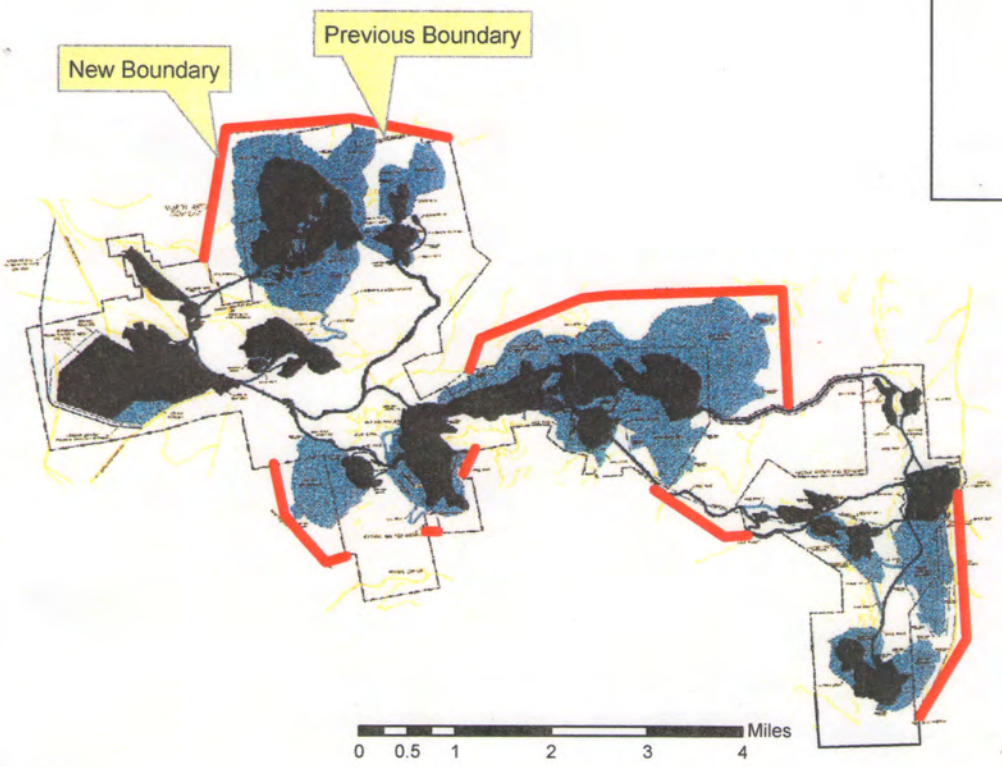
Persons wishing to comment on this proposal may do so by sending comments to the following address:

Lynn Bjorklund
Bureau of Land Management, Ely Field Office
HC 33 Box 33500
Ely, Nevada 89301
Tel (774) 289-1893 Email: Lynn_Bjorklund@nv.blm.gov

Barrick Gold Corporation - North Operations Area EIS

Ely Field Office
Bureau of Land Management





Legend

- Proposed Boundary Expansion
- Permitted Disturbance
- Proposed Expansion

N

No warranty is made by the Bureau of Land Managment as to the accuracy, reliability, or completeness of these data for individual use or aggreatgate use with other data.

January 2007

BLM SCOPING COMMENT SHEET

Informed decisions are better decisions: The Bureau of Land Management (BLM) believes that extensive public involvement will serve to improve communication, develop enhanced understanding of different perspectives, and identify solutions to issues and problems. We look forward to hearing from you!

Where to provide comments: You can hand this form in at a public scoping meeting or mail it in using the address on reverse. ***Comments can also be provided via email to: Lynn_Bjorklund@nv.blm.gov.***

Name_____County_____

Title_____Organization_____

Mailing Address_____

City_____ State _____Zip_____

Email_____

Date _____ Meeting Location (if applicable)_____

☐ Please check box if you do **not** want your name released when comments are made public.

☐ Please check box if you want to receive the notice of availability of the draft Environmental Impact Statement.

COMMENT *(use back side if you need additional space or attach additional sheets)*

_____

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To Return via US Mail: Fold in thirds so BLM address (on reverse) is showing, add postage, tape bottom of fold, and mail. ***Please have comments postmarked by May 25, 2007.***

To provide comments via email: Please email comments to: Lynn_Bjorkund@nv.blm.gov ***by May 25, 2007.***

Comments, including names, street addresses, e-mail addresses, and phone numbers (if provided) of respondents will be available for public review at the BLM Ely Field Office during regular business hours (8:00 am to 4:30 pm), Monday through Friday, except holidays. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Thank you for your comment!

To return via mail:
Fold in thirds so BLM address (above) is showing,
add postage, tape bottom of fold, and mail.
Please postmark by: May 25, 2007

Comment continued:

From:

_____

_____

_____

Place

Stamp

Here

Lynn Bjorklund
Bureau of Land Management
Ely Field Office
HC 33 Box 33500
Ely, Nevada 89301

BLM News

ELY FIELD OFFICE NO. 07-028
FOR RELEASE: Tuesday, April 10, 2007
CONTACT: Chris Hanefeld (775) 289-1842

BLM Seeks Public Input on Bald Mountain Mine – North Operations Area EIS

The Bureau of Land Management (BLM) Ely Field Office is asking for the public's input in preparing an Environmental Impact Statement (EIS) for the consolidation and expansion of the Bald Mountain and Mooney Basin Mines in White Pine County, Nev. The two mines would be combined into one plan of operation called the North Operations Area and would include the proposed expansion of existing features.

The BLM has scheduled three public scoping meetings in Nevada, from 6 p.m. to 8 p.m. Dates and locations are: Monday, May 7, BLM Elko Field Office, 3900 East Idaho Street, Elko; Tuesday, May 8, Eureka Opera House, 31 South Main, Eureka; and Wednesday, May 9, BLM Ely Field Office, 702 North Industrial Way, Ely.

The EIS will evaluate the potential impacts that expanding mining operations may have on human, natural and cultural resources, as well as determine what measures would be necessary to mitigate or reduce the impacts.

The expansion would include the extension of existing open pits, expansion of existing rock disposal areas and heap leach facilities, and construction of a truck shop, as well as the continued operation, reclamation, and closure of the existing Bald Mountain and Mooney Basin mining operations, including mine offices, truck shops and warehouse, haul roads, ore stockpiles, access road, diversion ditches, power transmission lines, water wells and pipelines, process solution transmission pipelines and landfill.

Under the proposed action, there would be an additional disturbance of 3,808 acres. The proposed disturbance is on unpatented mining claims on BLM-administered public land. Project access will continue to be via existing public roads.

The BLM previously authorized Barrick Gold Corporation to disturb 3,418 acres within the Bald Mountain Mine Plan boundary and 742 acres within the Mooney Basin Mine Plan boundary for a total of approximately 4,160 acres associated with pits, rock disposal areas, heap leaching, roads, growth media stockpiles, exploration, and underground mining activities. The Mooney Basin Mine and the Bald Mountain Mine have been previously analyzed in environmental assessments from 1983 through 2006 as well as the 1995 Bald Mountain Mine Expansion Project Environmental Impact Statement. The size and scope of the new proposal, as well as length of time since the ROD was signed, requires that a new EIS be developed to analyze the proposed expansion.

(more)

The formal public scoping process concludes at 5 p.m., Friday, May 25, 2007. Interested individuals should address all written comments to the BLM Ely Field Office, HC 33 Box 33500, Ely, Nev., 89301.

For more information, contact Project Manager Lynn Bjorklund, at (775) 289-1893 or at Lynn_Bjorklund@nv.blm.gov.

- BLM -

BLM Nevada News

ELY FIELD OFFICE NO. 2007-034
FOR RELEASE: Wednesday, May 2, 2007
CONTACT: Chris Hanefeld, (775) 289-1842; chanefel@nv.blm.gov

BLM Seeks Public Participation on Bald Mountain Mine – North Operations Area EIS

Bureau of Land Management (BLM) Ely Field Office and Barrick Gold Corporation representatives are scheduled to meet with the public from 6 p.m. to 8 p.m., Wednesday, May 9, at the BLM Ely Field Office, 702 North Industrial Way, in Ely, Nev., to get input on the proposed consolidation and expansion of the Bald Mountain Mine and Mooney Basin operations.

The North Operations Area Environmental Impact Statement (EIS) will evaluate the potential impacts that expanding the Bald Mountain Mine and Mooney Basin operations may have on human, natural and cultural resources, as well as determine what measures would be necessary to mitigate or reduce the impacts. These two adjacent mines (Bald Mountain Mine and Mooney Basin Mine) will be combined into one plan of operation called the North Operations Area.

The expansion would include the extension of existing open pits, expansion of existing rock disposal areas and heap leach facilities, and construction of a truck shop, as well as the continued operation, reclamation, and closure of the existing Bald Mountain Mine and Mooney Basin operations, including mine offices, truck shops and warehouse, haul roads, ore stockpiles, access road, diversion ditches, power transmission lines, water wells and pipelines, process solution transmission pipelines and landfill.

Under the proposed action, there would be an additional disturbance of 3,808 acres. The proposed disturbance is on unpatented mining claims on BLM-administered public land. Project access will continue to be via existing public roads.

The formal public scoping process concludes at 5 p.m., Friday, May 25, 2007. Interested individuals should address all written comments to the BLM Ely Field Office, HC 33 Box 33500, Ely, Nev., 89301.

For more information, contact Project Manager Lynn Bjorklund, at (775) 289-1893 or at Lynn_Bjorklund@nv.blm.gov.

- BLM -

GREAT BASIN MINE WATCH
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RENO, NV 89509

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WHITE PINE COUNTY LIBRARY
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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Ely District Office
HC33 Box 33500 (702 N. Industrial Way)
Ely, Nevada 89301-9408
http://www.blm.gov/nv/st/en/fo/ely_field_office.html

TAKE PRIDE IN AMERICA

DEC 08 2008

In Reply Refer to:
380910 NV040
N82888

Dear Interested Public:

Please find enclosed one copy of the Bald Mountain Mine North Operations Area Project Draft Environmental Impact Statement (DEIS), dated November 2008. This document has been prepared by the Bureau of Land Management, Ely Field Office and is provided for the public's review and comment.

The Proposed Action would result in combining the Bald Mountain Mine and Mooney Basin Plan of Operations boundaries to become the North Operations Area Project. The Proposed Action would result in an increase of disturbances from 4,160 acres to 8,080 acres. Existing facilities, including pits, rock disposal areas, heap leach pads, processing facilities, and interpit areas are proposed to be expanded. New facilities under the Proposed Action would include one new pit, four new rock disposal areas, haul roads, topsoil stockpiles, and a remote truck shop facility.

Alternatives that were analyzed in this DEIS include the Proposed Action, No Action Alternative, Backfill Alternative, and the Mooney Basin Heap Leach Pad Alternative. While an agency preferred alternative has been identified in this Draft, a final decision has not been made. The final decision, which will be documented in a Record of Decision, will be made only after consideration of the comments received on the Draft and after a Final EIS has been released.

Your review and comments are needed to ensure that your concerns are adequately addressed. All comments will be fully considered and evaluated in the preparation of the Final EIS, and all substantive comments will be addressed. Comments should be as specific as possible and address the adequacy and accuracy of the document.

The public scoping period for this project began on December 19, 2008, with the publication of the Notice of Availability in the Federal Register. Comments on the DEIS will be accepted for 45 days, until the close of business February 2, 2009. Written comments or questions may be directed to Lynn Bjorklund, Project Lead, at the BLM, Ely District Office, HC 33 Box 33500 (705 No. Industrial Way), Ely, Nevada 89301-9408. You may also email comments to: Lynn_Bjorklund@blm.gov.

Public meetings are scheduled for January 6, 7, and 8 in Ely, Elko, and Eureka respectively. Additional information on these public meeting times and locations will be released at least 15 days in advance.

Comments, including name and street addresses of respondents, will be available for public review at the Ely District Office during the regular business hours of 7:30 a.m. through 4:30 p.m., Monday through Friday, except holidays, and may be published as part of the Final EIS. You may request confidentiality if you are commenting as an individual, but you must state this prominently at the beginning of your written comments. Such requests will be honored to the extent allowed by law. Anonymous or illegible comments will not be considered. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be available for public inspection in their entirety.

The Plan of Operations, copies of the DEIS, and applicable technical reports are available for review at the BLM Ely District Office. If you have additional questions you can call Lynn Bjorklund at 775 289-1893.

Sincerely,

John F. Ruhs
District Manager
Ely District Office
NV040

[Federal Register: December 19, 2008 (Volume 73, Number 245)]
[Notices]
[Page 77831]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr19de08-160]

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[NV-040-07-5110-CF05; N-82888; 8-08807; TAS: 14X5017]

Notice of Availability of the Draft Environmental Impact Statement for the Bald Mountain Mine North Operations Area Project in White Pine County, Nevada

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of availability.

SUMMARY: In accordance with section 102(2)(c) of the National Environmental Policy Act of 1969 and 43 CFR 3809, the Bureau of Land Management (BLM) Ely District, Nevada has prepared a Draft Environmental Impact Statement (EIS) for a proposed expansion of the existing Plans of Operation for Barrick Gold U.S. Inc.'s Bald Mountain Mine and Mooney Basin Mine located in White Pine County, Nevada. The two existing mines would be combined into one new expanded operation which would be called the North Operations Area. The Draft EIS analyzes the environmental effects of the Proposed Action, two action alternatives, and the No Action Alternative.

DATES: Comments on the Draft EIS will be accepted for 45 days after the date this Notice of Availability (NOA) is published in the Federal Register. BLM will host public meetings in Ely, Elko, and Eureka, Nevada, to provide the public with an opportunity to review the proposal and project information. Federal, state, and local agencies, and other individuals or organizations that may be interested in, or affected by, the BLM's decision on this proposed Plan of Operation are invited to participate in these public meetings. The BLM will notify the public of the meeting dates, times, and locations at least 15 days prior to the meetings. Announcements of the public meeting will be made by news release to the media, individual letter mailings, and posting on the BLM Web site: http://www.blm.gov/nv/st/en/fo/ely_field_office.html. Comments received on the Draft EIS will be considered in preparing the Final EIS. Documents pertinent to this proposal may be examined at the Ely District Office.

ADDRESSES: Comments may be submitted by any of the following methods:
E-mail: lynn_bjorklund@nv.blm.gov
Fax: 775-189-1910
Mail: Bureau of Land Management, Ely District, Attention: Lynn Bjorklund, HC33 Box 33500, Ely, Nevada, 89301

FOR FURTHER INFORMATION: For further information and/or to have your name added to the mailing list, contact Lynn Bjorklund, Ely Field

Office, at 775 289-1893 or by email to lynn_bjorklund@nv.blm.gov.

SUPPLEMENTARY INFORMATION: Barrick Gold U.S. Inc. has submitted a proposal to expand and combine their existing Bald Mountain and Mooney Basin Mines into one project area to be administered under one Plan of Operation called North Operations Area. The mines are located approximately 65 miles northwest of Ely, Nevada. This proposed expansion is entirely on unpatented mining claims on BLM-administered public land.

The Proposed North Operations Area would include 4,160 acres of previously permitted disturbance and 3,920 acres of new disturbance, for a total of 8,080 acres. The project would consist of extending existing open pits, expanding existing rock disposal areas and heap leach facilities, construction of a truck shop, additional exploration, concurrent reclamation and continuing operation of existing facilities.

Individual respondents may request confidentiality. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, be advised that your entire comment, which includes your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so. All submissions from organizations, businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses will be available for public inspection in their entirety. The minutes and list of attendees for each public meeting will be available to the public and open for 60 days after the meeting to any participants who wish to clarify the views they expressed. All comments will be available to the public for review at the BLM Ely District Office throughout the EIS process.

Authority: 43 CFR 3809.

Michael J. Herder,
Acting District Manager, Ely District Office.
[FR Doc. E8-30079 Filed 12-18-08; 8:45 am]

BILLING CODE 4310-HC-P

White Pine County Library
950 Campton Street
Ely, NV 89301

Washoe County Library
P.O. Box 2151
Reno, NV 89502

Wells Branch Library
208 Baker Street
P.O. Box 691
Wells, NV 89835

Elko County Library
720 Court Street
Elko, NV 89801

Eureka Branch Library
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Karen Rajala
Public Land Users Advisory Committee
White Pine County Economic Diversification Council
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Bureau of Mining Regulation and Reclamation
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Nevada State Clearinghouse
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Mr. Tom Bath
Bath Lumber Co.
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Mr. Don Harris
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Ms. Diane Rice
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Bridger-Teton National Forest
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Washington, D.C. 20240

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75 Hawtning & Review
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Washington, D.C. 20004

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San Francisco, CA 94105

State Historic Preservation Office
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APPENDIX C

DEIS Public Comments and Responses

In the response to comments, every effort was made to address all points that were brought up by the person or group submitting the letter. Some comments are considered "non-substantive" as defined in the BLM NEPA Handbook and are not conducive to a response because they are:

- Comments in favor of or against the Proposed Action or alternatives that do not provide a reasonable basis to question the accuracy, adequacy, methodology, or assumptions within the EIS; present new information relative to the analysis; present new and reasonable alternatives; or cause changes or revisions to the EIS analysis, Proposed Action or alternatives;

- Comments that only agree or disagree with BLM policy or resource decisions without justification or supporting data that meet the criteria listed above (such as "more grazing should be permitted");

- Comments that do not pertain to the project area or the project (such as "the government should eliminate all dams," when the project is about a grazing permit); and

- Comments that take the form of vague, open-ended questions.

In cases such as the above, the BLM response will be "statement noted" indicating the letter or point was acknowledged, but no specific response was warranted.

A

STATE OF NEVADA
DEPARTMENT OF WILDLIFE
1100 Valley Road
Reno, Nevada 89512
(775) 688-1500 • Fax (775) 688-1595

JIM GIBBONS
Governor

KENNETH E. MAYER
Director

DOUG HUNT
Deputy Director

January 5, 2009

Lynn Bjorklund
BLM – Ely District Office
HC33 Box 33500
Ely, NV 89301-9408

RE: Bald Mountain Mine North Operations Area Project DEIS

Dear Ms. Bjorklund,

Thank you for the opportunity to read and review Barrick's proposed Bald Mountain Mine North Operations Area Project. The Nevada Department of Wildlife has enjoyed working with Barrick and the BLM to address issues through the NEPA process and the development of this document.

A-1 The Nevada Department of Wildlife would like to take this opportunity to endorse the Partial Backfill Alternative, as described in section 2.5.2 of the DEIS. The Partial Backfill Alternative maximizes the post-mining habitat for wildlife use. Large open pits left on the landscape not only reduce the quantity of habitat present for wildlife post-mining, but can pose as obstacles in terrestrial wildlife migration. Mule deer have been documented to use the proposed action area as transitional habitat between summer and wintering ranges. The Partial Backfill Alternative will increase the amount of transitional habitat present, as opposed to the Proposed Action, after mining ceases in the project area. As such, this alternative will minimize the long term impacts to Nevada's wildlife.

If you have any questions about my comments, please contact me.

Sincerely,

KMiller

Katie Erin G. Miller
Eastern Region Mining Biologist
Nevada Department of Wildlife
60 Youth Center Road
Elko, NV 89801
775-777-2368
kmiller@ndow.org

Response No. A-1: *Statement noted.*

B

Bald Mountain Mine North Operations Area Project
Draft Environmental Impact Statement

Draft EIS Public Meeting Comment Form

Informed decisions are better decisions: The Bureau of Land Management (BLM) believes that extensive public involvement will serve to improve communication, develop enhanced understanding of different perspectives, and identify solutions to issues and problems. We look forward to hearing from you.

Where to provide comments: You can hand this form in at a public scoping meeting or mail it using the address on reverse. ***Comments can also be provided via email to: Lynn_Bjorklund@blm.gov.***

Bureau of Land Management
JAN 12 2009
RECEIVED

Name PATRICK ROGERS County ELKO

Title _____ Organization _____

Mailing Address 408 FIR STREET

City ELKO State NV Zip 89801

Email _____

Date 08 JAN 2009 Meeting Location (if applicable) ELKO

☑ Please check box if you do **not** want your name released when comments are made public.

☑ Please check box if you want to receive a hard copy of the Final Environmental Impact Statement and Record of Decision.

COMMENT *(use back side if you need additional space or attach additional sheets)*

B-1 I strongly support the Bald Mountain Mines North Operations Area Project and encourage the BLM to quickly move to an FEIS and Favorable R.O.D. The DEIS is comprehensive and well-written. The design features and SOPs, effectively minimize potential environmental impacts. The project will create much-needed economic growth and stability. Barrick has a proven record of responsible, environmentally-protective operations and is a strong supporter of the communities in which they operate.

To Return via US Mail: Fold in thirds so BLM address (on reverse) is showing, add postage, tape bottom of fold, and mail. ***Please have comments postmarked by February 2, 2009.***

To provide comments via email: Please email comments to: Lynn_Bjorklund@blm.gov ***by February 2, 2009.***

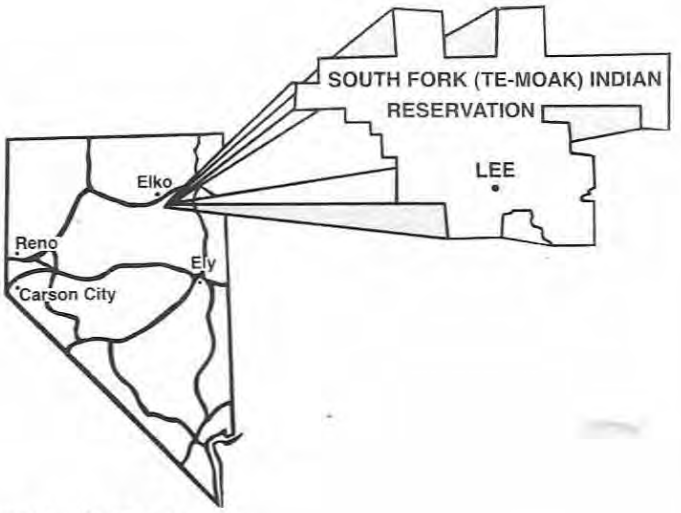
Comments, including names, street addresses, e-mail addresses, and phone numbers (if provided) of respondents will be available for public review at the BLM Ely District Office during regular business hours (7:30 am to 4:30 pm), Monday through Friday, except holidays. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Response No. B-1: *Statements noted.*

C

SOUTH FORK BAND COUNCIL
SOUTH FORK INDIAN RESERVATION
21 LEE, B-13
SPRING CREEK, NEVADA 89815

775-744-4273 FAX 775-744-4523



RESOLUTION OF THE GOVERNING BODY
OF THE
SOUTH FORK BAND INDIAN RESERVATION

Resolution No. 07-SF-19

BE IT RESOLVED BY THE SOUTH FORK BAND COUNCIL:

WHEREAS, this is a constituent Band of the Te-Moak Tribe, known as the South Fork Band Council, as defined by the Indian Reorganization Act of June 18, 1934, as amended and operates and functions in accordance with the Constitution of Te-Moak Tribe of Western Shoshone Indians of Nevada, and

WHEREAS, the South Fork Band Council is the governing body of the South Fork Indian Reservation, and is empowered by the Constitution to promote and protect the welfare of its members, and to enact all ordinances and resolutions which shall be necessary and proper for carrying into effect the foregoing powers, and

WHEREAS, mining that is in operation by Barrick Mining Company has escalated out of proportion to affect the lands by polluting the waters, fish, and changing the migration paths and routes of all animals that have been here for thousands of years, and

WHEREAS, the mines that Barrick has operating and are planning to open are the Cortez Hills, Pipeline Project, Horse Canyon, Bal Mountain, Beteiz Mine, and other mines that are not made public as of yet. These mines will affect all people, sportsmen, grazers, water tables, springs, Shoshone gathering areas for pine nuts, medicine plants, sacred areas, burial areas, animals, birds, and all things that have a purpose in the circle of life, and

C-1

WHEREAS, the Shoshone People have not agreed to the vast devastation of lands and cultural areas that have been removed by the mining of gold, and

WHEREAS, the expansion of Bald Mountain will have an ever lasting impact to the Odgers Ranch area in ways that hurt the members that are trying to make a living for their families and the South Fork Reservation. The members of the Odgers Reservation will lose water, grazing areas, pine nut areas, gathering areas, and many traditional values.

C-2 **NOW THEREFORE BE IT RESOLVED** that Barrick Mining cease in being partners with BLM in destroying Nevada and Shoshone ancestral lands under the Treaty of Ruby Valley. The South Fork Band Council opposes any and all mining expansions until the Supreme law of the land is respected and Barrick be more involved in following its guidelines and policy on indigenous lands and its people.

C-3 **BE IT FURTHER RESOLVED THAT,** the South Fork Band Council encourages the Te-Moak Tribal Council to become more involved in these mining issues on behalf of the Western Shoshone People.

- CERTIFICATION -

I, the undersigned as Chairman of the South Fork Band Council do hereby certify that the South Fork Band Council is composed of seven (7) members, of whom **6** constituting a quorum were present at a Special Meeting duly held on the 26th day of June 2007, and that the forgoing resolution was duly adopted at such meeting by a vote of **6 for, 0 against,** and **0 abstentions,** pursuant to Article 4, Section 12 (a) and (b) and Section 13 of the Constitution of the Te-Moak Tribe of Western Shoshone Indians of Nevada.

Cheryl Mose-Temoke, Chairman
South Fork Band Council

Attest:

Kristine Preston, Acting Recording Secretary

Response No. C-1: *All resources identified in the South Fork Band Resolution No. 07-SF-19 (such as grazing-Section 3.10, water resources-Section 3.2, pine nut areas-Section 3.12, etc.) have been identified and addressed in the FEIS. Environmental Justice is discussed in Section 3.18.1 and Section 3.18.2 and identifies the Proposed Action is not expected to have a disproportionate effect on any particular population. Section 3.20 indicates no traditional cultural properties have been identified within the Proposed Action area that might be impacted by the Proposed Action or any of the alternatives.*

Response No. C-2: *Statements noted.*

Response No. C-3: *BLM will continue ongoing consultation with Native American Tribes and governmental representatives in accordance with* the American Indian Religious Freedom Act of 1978, Executive Order 13007, *Indian Sacred Sites*, and *Section 106 of the National Historic Preservation Act.*

D

Lynn Bjorklund
Environmental Protection Specialist/Minerals Egan Field Office, Ely District Bureau of Land Management
775 289-1893
----- Forwarded by Lynn Bjorklund/EYFO/NV/BLM/DOI on 02/02/2009 04:16 PM -----

Emiliano McLane <bosquedo@yahoo.com>
02/02/2009 04:09 PM

To: lynn_bjorklund@nv.blm.gov
cc:
Subject: Bald Mountain DEIS comment

D-1 To whom this may concern,
On behalf of the South Fork Band Environmental Department, we would like to oppose any expansion of the said mine as it will harm even more of the surrounding environment. Until false studies have been eleminated from your reports and comments are actually looked at and considered, our department will continue to oppose the Bald Mountain Mine North Operations Area Project in White Pine County, Nevada. Also, I have attached a resolution from the South Fork Band Tribal Council opposing the project. Thank you for your consideration,

Emiliano McLane, Coordinator
South Fork Band Environmental
21 Lee B-13
Spring Creek, NV 89815
Phone: 775-744-2387

(See attached file: Microsoft_Word_-_south_fork_resolution[1].pdf)

Response No. D-1: *The South Fork Band Council Resolution 07-SF-19 that was attached to this letter is addressed in Responses C-1 through C-3. All substantive comments have been considered and responded to in this Final Environmental Impact Statement.*

E

United States Department of the Interior

U. S. GEOLOGICAL SURVEY

Reston, VA 20192

In Reply Refer To:
Mail Stop 423

January 29, 2009

Ms. Lynn Bjorklund, Project Lead
Bureau of Land Management
Ely District Office
HC 33 Box 33500
705 No. Industrial Way
Ely, Nevada 89301-9408

Subject: Draft Environmental Impact Statement for the Bald Mountain Mine North Operations Area Project

Dear Ms. Bjorklund:

As requested by your correspondence of December 8, 2008, the U.S. Geological Survey (USGS) has reviewed the subject draft environmental impact statement (DEIS) and offers the following comment.

SPECIFIC COMMENT

Section 3.2.3 Groundwater Affected Environment, page 3-27, first paragraph, last 2 sentences; and Section 6.1 References, page 6-15

E-1 The USGS publication (2007) is no longer current due to changes in the water budget calculations. It has been superseded by the more recent publication, Welch and others (2008). The results presented in the more recent report should be incorporated into analyses presented in the final EIS.

REFERENCE

Welch, A. H.; Bright, D.J.; and Knochenmus, L. A., eds, 2008, Water Resources of the Basin and Range Carbonate-Rock Aquifer System, White Pine County, Nevada, and Adjacent Areas in Nevada and Utah, U.S. Geological Survey Scientific Investigations Report 2007–5261, 97 p. available on the Internet at http://pubs.usgs.gov/sir/2007/5261/

Thank you for the opportunity to review and comment on the DEIS. If you have any questions concerning our comment, please contact Lloyd Woosley, Chief of the USGS Environmental Affairs Program, at (703) 350-8797 or at lwoosley@usgs.gov.

Sincerely,

/Signed/

James F. Devine
Senior Advisor for Science Applications

Response No. E-1: *This reference information has been changed in the FEIS, as suggested except for the date. The date was kept as 2007 as this is the preferred reference listed in the publication. The information in the new publication was reviewed. As it did not present information that changed the evaluation or conclusion of this document, no further changes were deemed necessary.*

F

"Steve Tuttle"
<stuttle@klune.com>
01/06/2009 09:52 AM

To <Lynn_Bjorklund@nv.blm.gov>
cc
bcc
Subject DEIS Objection to Expansion

History: This message has been forwarded.

To: Lynn Bjorklund
Project Lead
BLM

In Reference to:
DEIS
380910 NV040
N82888
Jan. 6, 2009

General Comments:

Dear Lynn,

F-1 I am a property owner of forty acres of private patented property bordering the proposed mining plan for the Bald Mountain Mine North Operation Area Project.

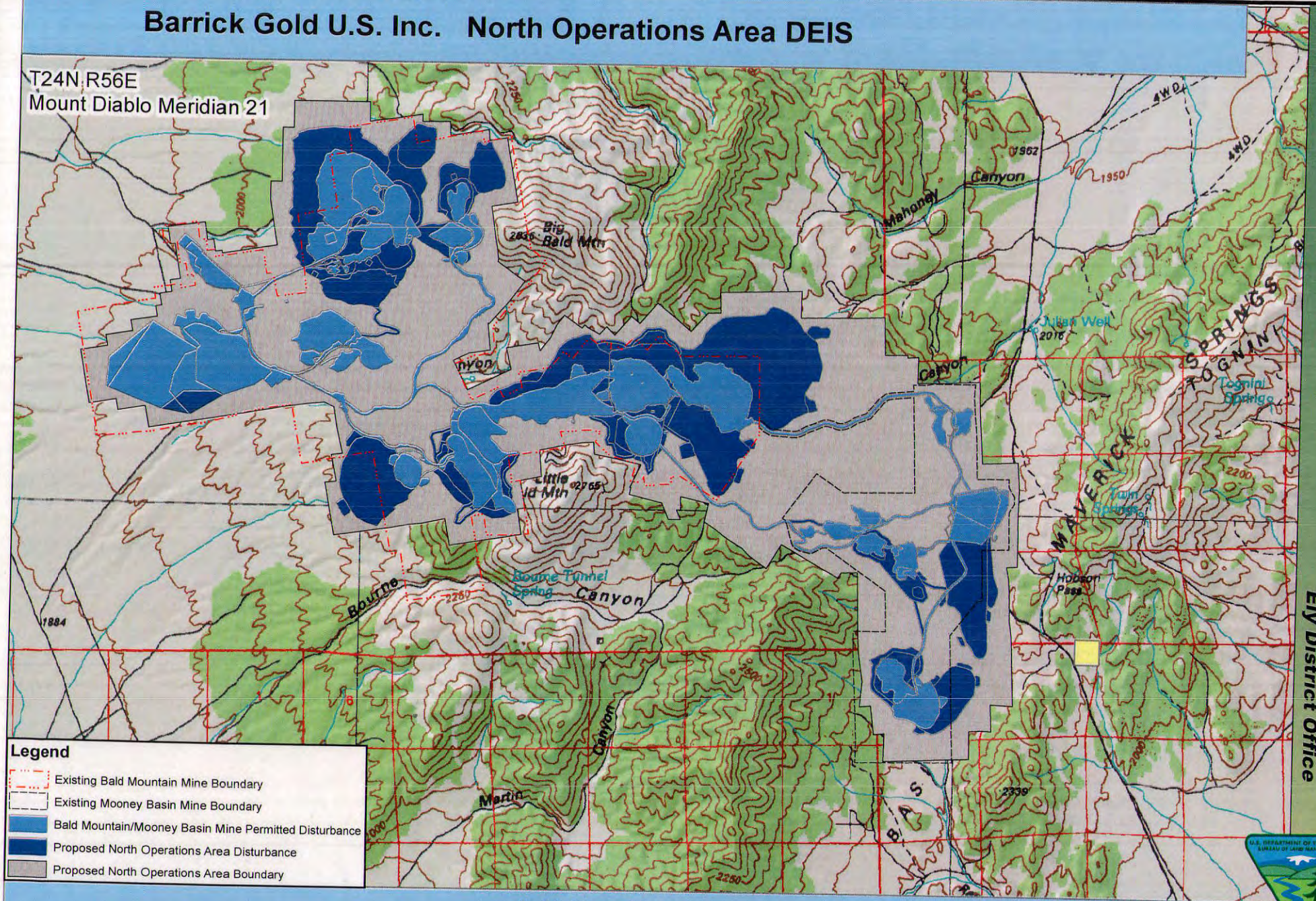
The location description of my property is the NE ¼ NE ¼ Sec. 5, Township 23, Range 58 Lot #1. I purchased the property in 1981 and my plans were, and still are, to develop the property into recreational building lots. My concern is that this Environmental Impact Statement Proposal has ignored the proximity of my property to the mining activity and does not address the impact the mine activity will have on my property. The current proposal will bring the Mooney Leach Pad, Saga RDA and the Saga Pit a few thousand feet from my property.

Barrick Gold is well aware of the proximity of my property and my plans for the recreational development. Placer Dome (Barrick Gold), placed mining claims on my property on June 4, 2005, and have, until recently, been active in purchasing the surface and mineral rights, but to date no agreements for sale have been made. Therefore; to protect my interests and guarantee the greatest return on my investment from my property, I must take exception, and object to the Expansion Proposal of the Bald Mountain Mine North Operations Area Project for the environmental impacts the mining will place on my property.

F-2 I hope my property concerns are addressed within any final draft of the DEIS and that all my property rights for clean air, adequate clean water, land access, and visual impact are addressed and that I am protected. I will be e-mailing you specific comments and questions before the Feb. 2, 2009 deadline of the scoping period.

Thank You,

Barrick Gold U.S. Inc. North Operations Area DEIS



Response No. F-1: *Potential impacts of the Proposed Action on surrounding areas have been analyzed in Section 3 of the FEIS. The property in question was analyzed in its current undeveloped state. On March 2, 2009, JBR spoke with Mr. Bob Bishop, White Pine County Assessor's office. According to the Assessor's office, no plans for development have been submitted to White Pine County for consideration for this property. It is also noted the property identified in the letter does not border the North Operations Project plan of operations border, but is approximately 3,300 feet (0.63 mile) from the Plan of Operations border. Implementation of the proposed project will result in the Saga Rock Disposal Area being 5,100 feet (0.97 mile) from the subject parcel; Saga Pit being 8,000 feet (1.52 miles) from the subject parcel; and the Mooney Heap Leach Pad being 4,800 feet (0.91 mile) from the subject parcel.*

Response No. F-2: *The text of the FEIS has been revised to address these issues and they have been addressed throughout Chapter 3 of the FEIS.*

G

Lynn Bjorklund
Environmental Protection Specialist/Minerals Egan Field Office, Ely District Bureau of Land Management
775 289-1893
----- Forwarded by Lynn Bjorklund/EYFO/NV/BLM/DOI on 01/28/2009 09:19 AM -----

"Steve Tuttle" <stuttle@klune.com>
01/28/2009 09:18 AM

To <Lynn_Bjorklund@nv.blm.gov>
cc
Subject Specific Comments on DEIS Bald Mountain

In my opposition to this expansion, these are specific issues and questions I have with this draft of the DEIS Bald Mountain Mine North Operation Area Project.
To: Lynn Bjorklund
Project Lead
BLM

In Reference to:
DEIS
380910 NV040
N82888

Jan. 28, 2009

Dear Lynn,

G-1 I am a property owner of forty acres of private patented property bordering the proposed mining plan for the Bald Mountain Mine North Operation Area Project.

The location description of my property is the NE ¼ NE ¼ Sec. 5, Township 23, Range 58, Lot #1. I purchased the property in 1981 and my plans were, and still are, to develop the property into recreational building lots. My concern is that this Environmental Impact Statement Proposal has

ignored the proximity of my property to the mining activity and does not address the impact the mine activity will have on my property. The current proposal will bring the Mooney Leach Pad, Saga RDA and the Saga Pit a few thousand feet from my property as I mentioned in my General Comments e-mail dated January 6, 2009.

Specific Comments and Questions in opposition to the proposed DEIS for the Bald Mountain Mine

S-10 Air Quality page S-10

G-2 My property is the closest sensitive receptor to this proposed action. Long Valley road intersects the tip of my property which is less than 1/2 mile east of the proposed expansion of the Mooney Basin leach pad. This section states the air quality will not be noticeable because the nearest residence is more than five fives from the purposed action area. This will not be true when I develop. How will my air quality be protected?

G-3 S-11 Noise and Vibration
This section states the noise profile would be expected to be unnoticeable or minor with the closest human residence over five miles away. This will not be true when I develop my property. How will the residences be protected?

G-4 Figure 2-6 Mooney Basin Operational Detail This map shows the purposed expansion of the Mooney Leach Pad getting very near to my property. Section Visual Resource S-10 shows the four key observation points. I believe my property should be added as an observation point to assure that a leach pad at 7195 ft crest elevation will not be seen from my property at 6800 ft altitude, or the Saga RDA stockpile at 7,000 crest elevation being seen from my property. Are reclamation efforts going to remove the leach pad and the Saga RDA after mining is complete?

Page 3-4 Section 3.2.1 Surface Water Affected Environment.

G-5 It should be noted that Willow Springs is a source of good drinking water year round, and less than ½ mile from my property. I have used this spring for twenty eight years and hope to continue to have access.

Water resource page S-3 Drinking Water:

G-6 Will Willow Spring be protected?

Groundwater page S-3

G-7 It should be noted of my plans for development and water usage needs, and be determined if my water demand for my development will be impacted.

Land Use and Access page S-9

G-8 This section states public access would be restricted in areas of active mining and processing for the life of the mine. Myself, and any private landowners in my development will need public access at all times to their property.

Waste Management 2-40

G-9 | Will the proximity of the landfill site to my property, become a problem for contamination for my water supply for my development?

G-10 | Ground Water Environmental Consequences 3.2.4 It is true no permitted generator users within five miles currently but if I obtain my development permit will I have enough clean and drinkable water?

G-11 | Effects on Air Quality for Existing Emission Sources 3-116 This sections states the nearest residence or areas of human activity are ranches in the valleys below the purposed action and at least five miles distant from the mine boundary. My property is about ½ mile from the boundary. The mine site is about the same elevation as my property and therefore could increase the potential for concentration of pollutants on my property. How will the property be protected?

Regulatory Framework 3-117

G-12 | Will my development be a Class 1 or Class 11 and will mining activity meet the standards with the proximity of my property to the mine boundary?

Air Source Emissions 3-123

G-13 | This table shows expected emissions. Are these quantities allowable for residences where my property is located?

Access Road Corridors 3-124

G-14 | My property is intersected by the Long Valley Road and I would be a sensitive receptor in the direct impact area.

Ambient Air Quality Impacts 3-125

G-15 | Air quality modeling showed all predicted maximum impacts would occur on the Plan of operation boundary. My property is on the boundary and is not miles short of the nearest residence. How will my air quality be protected from these emissions?

Visual Resources Environmental Consequences 3.15.2

G-16 | Should my property be classified as a visually sensitive land use so the quality of scenic resources would be protected with the Mooney leach pad, Saga RDA and possibly the Saga Pit so near? How will my views be protected during and after mining efforts are complete?

Table 3-14 Page3-102

G-17 | Should my property be added to the table? NE ¼ NE ¼ Section 5 Township 23 N Range 58 E.

G-18 | 3.14.2 Air Quality Environmental Consequences If I am a Class I area, will the air pollutant concentrations not be exceeded in ambient air?

G-19 | Mercury Emissions and other Chemicals listed Table 3-23 What will be done to control these emissions modeled on table 3-23 unto my property? Will my property be modeled?

Table 4-2

G-20 Should my property should be added to the table listing interactions between resources.

I have stated my opposition with issues and questions I have with this draft of the proposal as written, but offer issues might need to be addressed now that the BLM is aware of the proximity of my property to the mining operation and my plans for development of my property.

As I stated in my general comments on January 6,2009, I hope my property concerns are addressed within any final draft of the DEIS and that all my property rights for clean air, adequate clean water, land access, and visual impact are addressed and that I my property rights are protected.

Thank You,

Steven T. Tuttle
2044 East 725 South
Springville, Utah 84663

Response No. G-1: *See the response to comment F-1. It is noted the property identified in the letter does not border the North Operations Project Plan of Operations border, but is approximately 3,300 feet (0.63 mile) from the project Plan of Operations boundary.*

Response No. G-2: *A sensitive receptor has been more clearly defined in Section 3.14.1 Sensitive Receptors in the FEIS. The air quality analysis (Section 3.14 of the FEIS) documents that State and Federal ambient air quality standards would be met both at and beyond the project boundary. The average and maximum ambient impact of the Proposed Action would be comparable to those of the existing action, so there would be little to no net increase in impacts.*

Current and historic levels of traffic on the Long Valley Road by the referenced property result in a moderate amount of dust per vehicle passage, but very light average impacts because of the infrequent and intermittent traffic levels. The 15% increase in mine-bound traffic will slightly increase the frequency of vehicle passages, but will continue to result in minimal average impacts because traffic would remain light and intermittent. The slight increase in road traffic and associated dust does not change the overall assessments of impacts in the vicinity of the Tuttle property.

The use of the term sensitive receptor and its lack of applicability to an undeveloped and uninhabited parcel are documented in the response to comment G-14.

Response No. G-3: *Additional noise analysis has been added to Section 3.16.2 of the FEIS that addresses the noise level at this property.*

Response No. G-4: *Key Observation Points are selected to provide representative views of the Proposed Action because it is not feasible to discuss potential impacts from all possible viewing locations. When selecting Key Observation Points, emphasis is placed on locations from which the greatest number of people will view the project.*

A viewshed analysis of areas visible from the point of highest elevation on the Tuttle property shows that little of the existing and authorized disturbance (Saga Pit and Rock Disposal Area, Horseshoe Pit, and Belmont Pit 2) can be seen from the Tuttle property because of hills west of the property. Under the Proposed Action, virtually all of the Mooney Heap Leach Pad and Saga Rock Disposal Area expansion would be hidden from view (see Response to Comment Figures 1 and 2, which are attached to this response). Specifically, Figure 1 shows what is visible from the Tuttle property now (e.g., shows existing BMM facilities that are visible from the Tuttle property's highest point). Figure 2 shows what existing and proposed BMM facilities will be visible from the Tuttle property's highest point. The viewshed analysis is conservative because it does not account for the effect of pinyon-juniper forest on the hills between the Tuttle property and the Plan of Operations boundary that would tend to further obscure disturbed areas. Project impacts on the view from the Tuttle property are minor and no changes are required to the analysis of visual resource impacts presented in the DEIS.

As the FEIS states, the Mooney Heap Leach Pad and Saga Rock Disposal Area will not be removed but will be reclaimed by grading to final contours and restoring native vegetation.

Response No. G-5: *It is assumed the Willow Spring referred to in the letter is located in Section 32, Township 24 North, Range 58 East as shown on Figure 3-2 in the FEIS. This spring is more than one mile north of the Tuttle property. Both Willow springs shown on Figure 3-2 are*

located outside of the existing and proposed Plan of Operations boundary; and therefore access to both Willow springs would not be affected by the Proposed Action. Actual use of the spring is governed through water rights managed by the Nevada Division of Water Resources State Engineer. A search of the Nevada Division of Water Resources water rights database indicated Julian Goichechea holds the water rights to use Willow Spring for stock watering.

Response No. G-6: *Willow Spring is discussed in Section 3.2.2 of the FEIS and the analysis shows spring flow and quality would not be affected by BMM because the recharge source is upgradient and from the east.*

Response No. G-7: *Potential project effects to surface water and groundwater, including all valid existing water rights, were analyzed in Section 3.2 of the FEIS. A review of the Nevada Division of Water Resources database does not indicate any water rights held under the name of Tuttle in this area, and any future development plans and associated water needs for this property will need review and approval from the Nevada Division of Water Resources State Engineer.*

Response No. G-8: *Public access would be restricted only to active mining areas within the Plan of Operations boundary. Access to other private property owners in the area, including the Tuttle property, would not be restricted by the Proposed Action.*

Response No. G-9: *Potential project effects to surface water and groundwater were analyzed in Section 3.2 of the FEIS. The proposed additional Class III Waivered landfill to be developed near the Mooney Basin Operations Area would be designed, permitted, constructed, and operated per standards regulated by Nevada Division of Environmental Protection to insure protection of Waters of the State. The Class III Waivered landfill accepts only inert industrial waste, preventing potential contamination of any water supply.*

Response No. G-10: *Potential project effects to surface water and groundwater were analyzed in Section 3.2 of the FEIS. Also see response to G-7 above.*

Response No. G-11: *The air quality analysis (Section 3.14 of the FEIS) documents applicable ambient air quality standards would be met everywhere at and beyond the project ambient air boundary. The average and maximum impacts of the Proposed Action would be comparable to those of the existing action, as there would be little to no net increase in emissions or impacts.*

Response No. G-12: *The Long Valley airshed is Class II. Compliance with applicable air quality standards is discussed in Response G-11.*

Response No. G-13: *Air quality standards are developed to protect public health and welfare. The response to G-11 documents that the applicable ambient air quality standards would be met at and beyond the project boundary.*

Response No. G-14: *Consistent with NEPA guidance and precedent and as described in Section 3.14.1 of the FEIS, properties or areas were considered sensitive receptors in the FEIS only if impacts to those sites could affect existing (or formally and definitively planned) populations or ecological areas especially sensitive to those impacts. That definition eliminates the undeveloped Tuttle property as a sensitive receptor.*

Response No. G-15: *See response to G-11.*

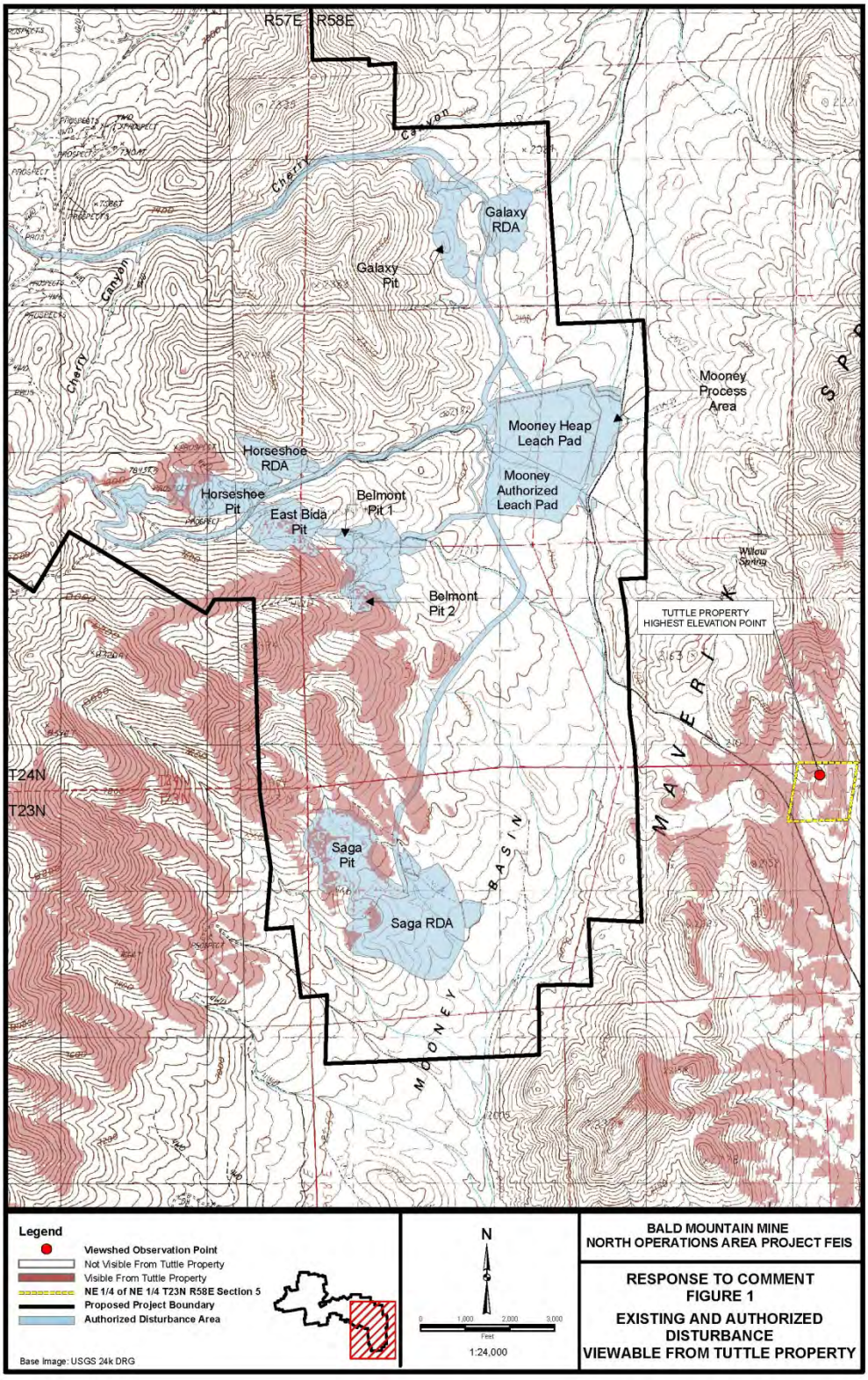
Response No. G-16: *Visual resource management designations apply only to public lands. However, additional analysis was performed to assess the visual impact of the project as seen from the Tuttle property (see Response G-4).*

Response No. G-17: *Table 3-16 lists administrative land use authorizations for public land only. Since the Tuttle property is private land, it is not listed in Table 3-16.*

Response No. G-18: *Class I and Class II areas are defined in Section 3.14.1 under the Regulatory Framework section of the FEIS. The nearest Class I airshed is the Jarbidge Wilderness near the Idaho border (see Response G-11).*

Response No. G-19: *As discussed in Section 4.14.2 of the FEIS, mercury air quality impacts and deposition were modeled at the project area and beyond. Mercury impacts associated with the Proposed Action were shown to represent less than 10% of the total natural background mercury deposition in any watershed and less than 1% of natural background mercury deposition rate in any watershed not draining from the project area. Figure 4-3 of the FEIS indicates the percentage of mercury deposition from BMM for the combination of Long Valley and Ruby Valley. The Tuttle property is located in the divide between those two valleys. Also, the facility will install and operate mercury controls that meet Nevada Maximum Achievable Control Technology requirements.*

Response No. G-20: *Only reasonably foreseeable future actions are included in Table 4-2; potential development of this property is considered too speculative to be considered a reasonably foreseeable future action at this time.*


R57E
R58E
Cherry Canyon
Galaxy RDA
Galaxy Pit
Mooney Process Area
Mooney Heap Leach Pad
Mooney Authorized Leach Pad
Horseshoe RDA
Horseshoe Pit
East Bida Pit
Belmont Pit 1
Belmont Pit 2
Willow Spring
TUTTLE PROPERTY HIGHEST ELEVATION POINT
T24N
T23N
Saga Pit
Saga RDA
MONEY BASIN
MAVERICK SPRINGS
Legend
Viewshed Observation Point
Not Visible From Tuttle Property
Visible From Tuttle Property
NE 1/4 of NE 1/4 T23N R58E Section 5
Proposed Project Boundary
Authorized Disturbance Area
Base Image: USGS 24k DRG
N
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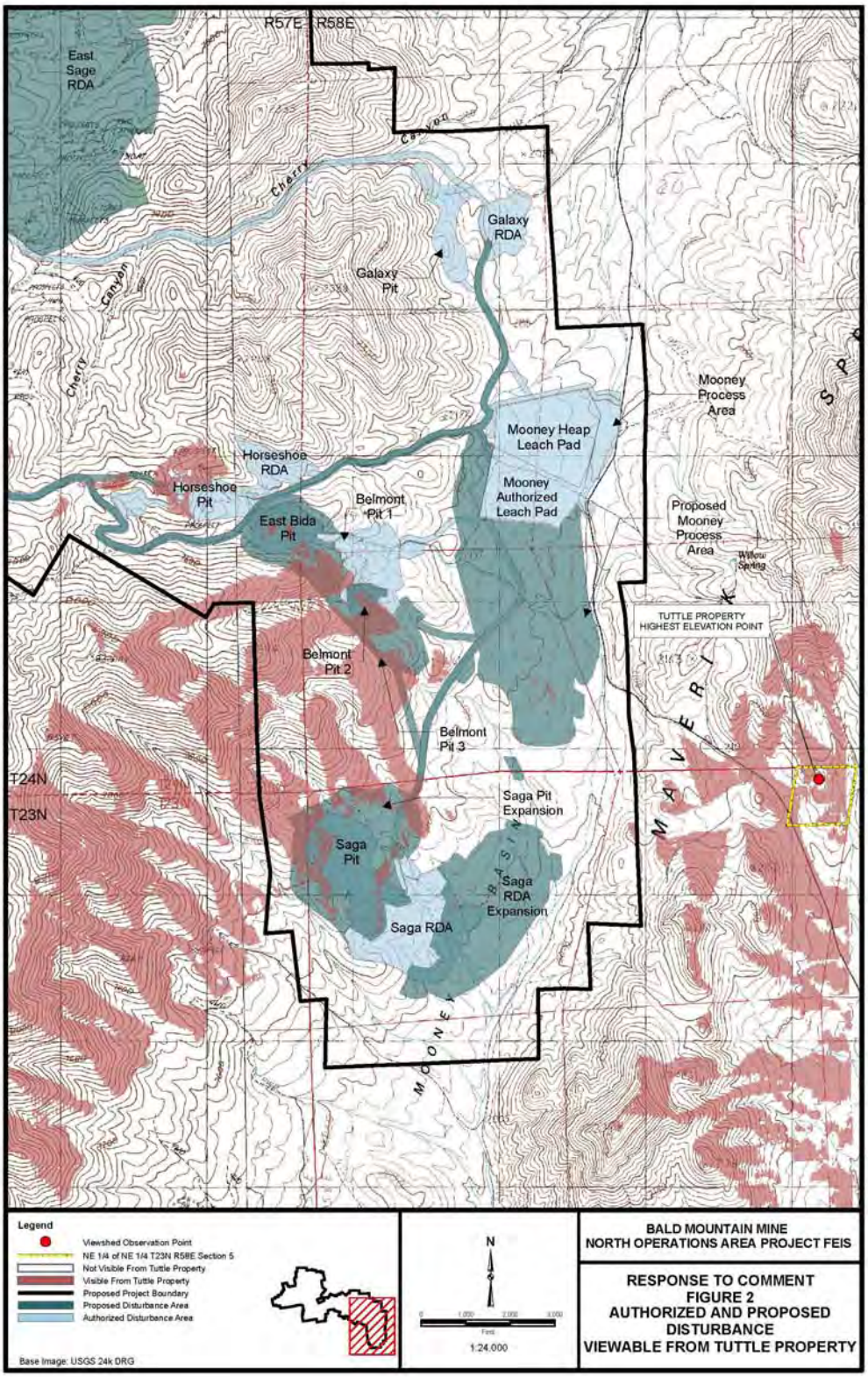
Feet
1:24,000
BALD MOUNTAIN MINE
NORTH OPERATIONS AREA PROJECT FEIS
RESPONSE TO COMMENT
FIGURE 1
EXISTING AND AUTHORIZED DISTURBANCE
VIEWABLE FROM TUTTLE PROPERTY


R57E
R58E
East Sage RDA
Cherry Canyon
Galaxy RDA
Galaxy Pit
Mooney Process Area
Mooney Heap Leach Pad
Horseshoe RDA
Horseshoe Pit
Mooney Authorized Leach Pad
Belmont Pit 1
East Bida Pit
Proposed Mooney Process Area
Willow Spring
TUTTLE PROPERTY HIGHEST ELEVATION POINT
Belmont Pit 2
Belmont Pit 3
T24N
T23N
Saga Pit Expansion
Saga Pit
Saga RDA Expansion
Saga RDA
MAVERICK BASIN
MOONEY
Legend
Viewshed Observation Point
NE 1/4 of NE 1/4 T23N R58E Section 5
Not Visible From Tuttle Property
Visible From Tuttle Property
Proposed Project Boundary
Proposed Disturbance Area
Authorized Disturbance Area
Base Image: USGS 24k DRG
N
1:24,000
BALD MOUNTAIN MINE
NORTH OPERATIONS AREA PROJECT FEIS
RESPONSE TO COMMENT
FIGURE 2
AUTHORIZED AND PROPOSED DISTURBANCE
VIEWABLE FROM TUTTLE PROPERTY

H

Bald Mountain Mine North Operations Area Project
Draft Environmental Impact Statement

Draft EIS Public Meeting Comment Form

Informed decisions are better decisions: The Bureau of Land Management (BLM) believes that extensive public involvement will serve to improve communication, develop enhanced understanding of different perspectives, and identify solutions to issues and problems. We look forward to hearing from you.

Where to provide comments: You can hand this form in at a public scoping meeting or mail it in using the address on reverse. ***Comments can also be provided via email to: Lynn_Bjorklund@blm.gov.***

Name Kenneth Moss County Elko

Title _____ Organization _____

Mailing Address 550 13th Street

City Elko State NV Zip 89801

Email Ken.moss@yahoo.com

Date Jan 7 2009 Meeting Location (if applicable) Elko BLM office

☐ Please check box if you do **not** want your name released when comments are made public.

☒ Please check box if you want to receive a hard copy of the Final Environmental Impact Statement and Record of Decision.

COMMENT *(use back side if you need additional space or attach additional sheets)*

As I understand this proposal it is for a continuation of an existing ~~project.~~ business. The area has supported mining for several decades -- you might say the area is zoned mining. The jobs will benefit Elko, White Pine and Eureka counties. My observation of Barrick as a company is that they consider the environment and the inhabitants of the area, both people and animals. I am in favor of allowing the mine to continue and expand its operations.

H-1

To Return via US Mail: Fold in thirds so BLM address (on reverse) is showing, add postage, tape bottom of fold, and mail. ***Please have comments postmarked by February 2, 2009.***

To provide comments via email: Please email comments to: Lynn_Bjorklund@blm.gov ***by February 2, 2009.***

Comments, including names, street addresses, e-mail addresses, and phone numbers (if provided) of respondents will be available for public review at the BLM Ely District Office during regular business hours (7:30 am to 4:30 pm), Monday through Friday, except holidays. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Response No. H-1: *Statements noted.*

I-1

Bald Mountain Mine North Operations Area Project
Draft Environmental Impact Statement

Draft EIS Public Meeting Comment Form

Informed decisions are better decisions: The Bureau of Land Management (BLM) believes that extensive public involvement will serve to improve communication, develop enhanced understanding of different perspectives, and identify solutions to issues and problems. We look forward to hearing from you.

Where to provide comments: You can hand this form in at a public scoping meeting or mail it in using the address on reverse. ***Comments can also be provided via email to: Lynn_Bjorklund@blm.gov.***

Name LARSON R. DILL County ELKO

Title SHOSHONE - SOUTH FORK Organization TE-MOAK, SOUTH FORK WSDP

Mailing Address HR-30 PO, BOX 260

City SPRING CREEK State NV. Zip 89815

Email

Date 1/8/07 Meeting Location (if applicable) ELKO

☐ Please check box if you do **not** want your name released when comments are made public.

☑ Please check box if you want to receive a hard copy of the Final Environmental Impact Statement and Record of Decision.

COMMENT *(use back side if you need additional space or attach additional sheets)*

I-1 I Believe That BLM is suppased To be The Care Takers of The lands of Nevada. also lands That The Shoshone nation owns by a treaty of 1863. Barrick Needs NOT To expand any further because of standing court case. BLM should check out The Record of Barrick world wide, it is not a pretty picture. Nevada is cattle country, [redacted] lands are very pretty for outdoor Rec. Not for mining at This exinct. Barrick will turn Nevada INTo a wasteland. Every thing of The lands belongs to The Shoshone, and was to be shared. Nevada should keep what is nevada's. Residents should speak up to save This land. (See Ceras decion) theaty 1863 - (Animals Birds - Insects ect. People, Cultures, Cattle people, sports men. young children, Babies.

To Return via US Mail: Fold in thirds so BLM address (on reverse) is showing, add postage, tape bottom of fold, and mail. ***Please have comments postmarked by February 2, 2009.***

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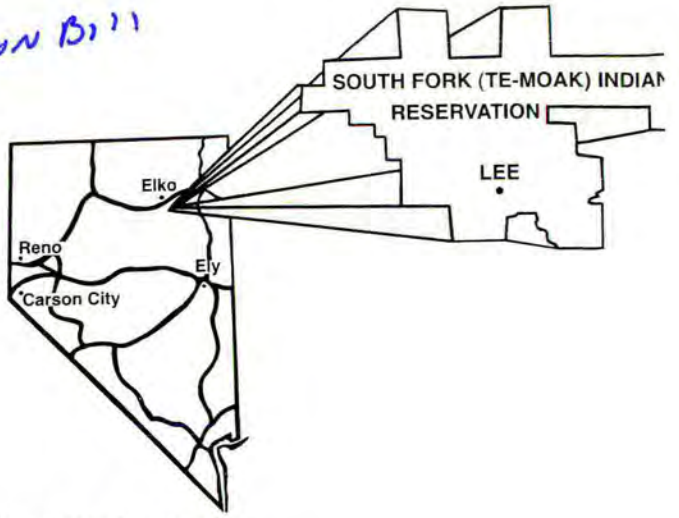
SOUTH FORK BAND COUNCIL
SOUTH FORK INDIAN RESERVATION
21 LEE, B-13
RING CREEK, NEVADA 89815

775-744-4273 FAX 775-744-4523

Larson Bill



RESOLUTION OF THE GOVERNING BODY OF THE SOUTH FORK BAND INDIAN RESERVATION

Resolution No. 07-SF-18

BE IT RESOLVED BY THE SOUTH FORK BAND COUNCIL:

WHEREAS, this is a constituent Band of the Te-Moak Tribe, known as the South Fork Band Council, as defined by the Indian Reorganization Act of June 18, 1934, as amended and operates and functions in accordance with the Constitution of Te-Moak Tribe of Western Shoshone Indians of Nevada, and

WHEREAS, the South Fork Band Council is the governing body of the South Fork Indian Reservation, and is empowered by the Constitution to promote and protect the welfare of its members, and to enact all ordinances and resolutions which shall be necessary and proper for carrying into effect the foregoing powers, and

WHEREAS, the South Fork Band Council makes its comment on the proposed mining for molybdenum at Mt. Hope, north of Eureka Nevada, which will affect areas that have many cultural and traditional values to Shoshone people, and

WHEREAS, there will be destruction of pine nut gathering areas, springs for the wildlife and bird life and there are many medicine plants that will be gone and there will be acid rock drainages for a long time, and

WHEREAS, the Shoshone people again will lose part of their heritage and traditional and religious values in this area, and many cattle ranchers will lose good grazing areas, and

WHEREAS, the Bureau of Land Management has again acted on this Mt. Hope Project without prior input from the Shoshone people.

NOW THEREFORE BE IT RESOLVED that the South Fork Band Council hereby opposes the Mount Hope Project in its entirety for the protection of the lands, water, and animal life that exists in the project area and that the BLM and Idaho General Mines

respect the lands of the Shoshone People and not proceed with the project which will cause future destruction to life giving resources for all people.

BE IT FURTHER RESOLVED THAT, the South Fork Band Council encourages the Te-Moak Tribal Council to become more involved in these mining issues on behalf of the Western Shoshone People.

- CERTIFICATION -

I, the undersigned as Chairman of the South Fork Band Council do hereby certify that the South Fork Band Council is composed of seven (7) members, of whom **6** constituting a quorum were present at a Special Meeting duly held on the 26th day of June 2007, and that the forgoing resolution was duly adopted at such meeting by a vote of **6 for, 0 against,** and **0 abstentions,** pursuant to Article 4, Section 12 (a) and (b) and Section 13 of the Constitution of the Te-Moak Tribe of Western Shoshone Indians of Nevada.

Cheryl Mose-Temoke, Chairman
South Fork Band Council

Attest:

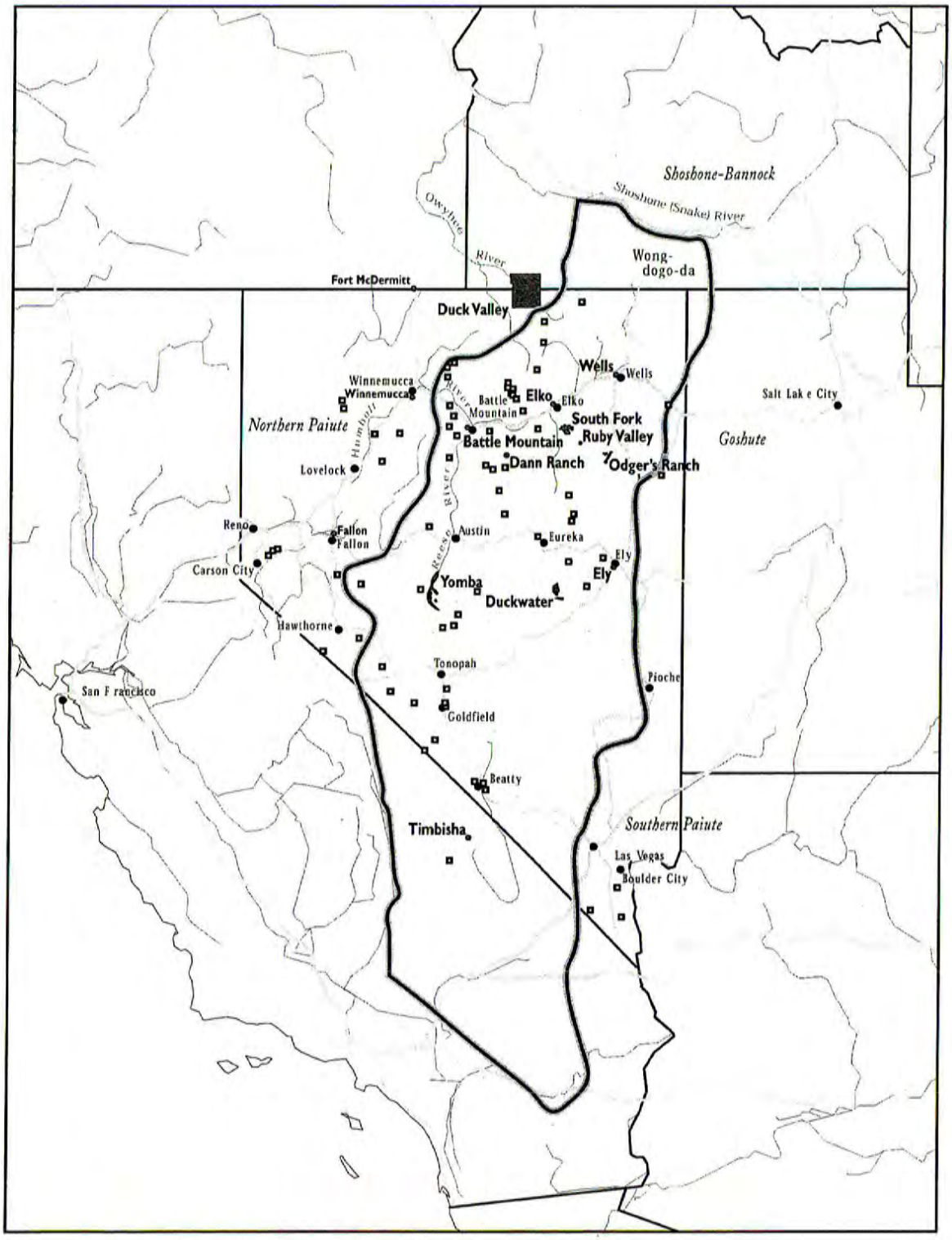
Kristine Preston, Acting Recording Secretary

I-3

Carson Bill

Newe Sogobia and Nevada Gold Mines

[the people's earth mother]



Newe Sogobia
(Western Shoshone National Council-1980's*
edited to boundary drawn with assistance from Chief Raymond Yowell)

Shoshone Land Base (1994)*

Timbisha — Shoshone Community

Winnemucca — Other Native Communities with Shoshone populations

Gold Mines

* Steven J. Crum, *The Road On Which We Came*, University of Utah Press, 1994

LARSON BILL

COMMITTEE FOR THE ELIMINATION OF RACIAL DISCRIMINATION
Sixty- eighth session
Geneva, 20 February – 10 March 2006

EARLY WARNING AND URGENT ACTION PROCEDURE

DECISION 1 (68)

UNITED STATES OF AMERICA

A. Introduction

1. At its 67th session held from 2 to 19 August 2005, the Committee considered on a preliminary basis requests submitted by the Western Shoshone National Council, the Timbisha Shoshone Tribe, the Winnemucca Indian Colony and the Yomba Shoshone Tribe, asking the Committee to act under its early warning and urgent action procedure on the situation of the Western Shoshone indigenous peoples in the United States of America.

2. Considering that the opening of a dialogue with the State party would assist in clarifying the situation before the submission and examination of the fourth and fifth periodic reports of the United States of America, due on 20 November 2003, the Committee, in accordance with article 9 (1) of the Convention and article 65 of its rules of procedure, invited the State party, in a letter dated 19 August 2005, to respond to a list of questions, with a view to considering this issue at its 68th session.

3. Responding to the Committee's letter, the State party, in its letter dated 15 February 2006, stated that its overdue periodic reports are being prepared and that they will include responses to the list of issues. The Committee regrets that the State party has not undertaken to submit its periodic reports by a specific date, that it has not provided responses to the list of issues by 31 December 2005 as requested, and that it did not consider it necessary to appear before the Committee to discuss the matter.

4. The Committee has received credible information alleging that the Western Shoshone indigenous peoples are being denied their traditional rights to land, and that measures taken and even accelerated lately by the State party in relation to the status, use and occupation of these lands may cumulatively lead to irreparable harm to these communities. In light of such information, and in the absence of any response from the State party, the Committee decided at its 68th session to adopt the present decision under its early warning and urgent action procedure. This procedure is clearly distinct from the communication procedure under article 14 of the Convention. Furthermore, the nature and urgency of the issue examined in this decision go well beyond the limits of the communication procedure.

B. Concerns

5. The Committee expresses concern about the lack of action taken by the State party to follow up on its previous concluding observations, in relation to the situation of the Western Shoshone peoples (A/56/18, para. 400, adopted on 13 August 2001). Although these are indeed long-standing issues, as stressed by the State party in its letter, they warrant immediate and effective action from the State party. The Committee therefore considers that this issue should be dealt with as a matter of priority.

6. The Committee is concerned by the State party's position that Western Shoshone peoples' legal rights to ancestral lands have been extinguished through gradual encroachment, notwithstanding the fact that the Western Shoshone peoples have reportedly continued to use and occupy the lands and their natural resources in accordance with their traditional land tenure patterns. The Committee further notes with concern that the State party's position is made on the basis of processes before the Indian Claims Commission, "which did not comply with contemporary international human rights norms, principles and standards that govern determination of indigenous property interests", as stressed by the Inter-American Commission on Human Rights in the case *Mary and Carrie Dann versus United States* (Case 11.140, 27 December 2002).

7. The Committee is of the view that past and new actions taken by the State party on Western Shoshone ancestral lands lead to a situation where, today, the obligations of the State party under the Convention are not respected, in particular the obligation to guarantee the right of everyone to equality before the law in the enjoyment of civil, political, economic, social and cultural rights, without discrimination based on race, colour, or national or ethnic origin. The Committee recalls its General recommendation 23 (1997) on the rights of indigenous peoples, in particular their right to own, develop, control and use their communal lands, territories and resources, and expresses particular concern about:

a) Reported legislative efforts to privatize Western Shoshone ancestral lands for transfer to multinational extractive industries and energy developers.

b) Information according to which destructive activities are conducted and/or planned on areas of spiritual and cultural significance to the Western Shoshone peoples, who are denied access to, and use of, such areas. It notes in particular the reinvigorated federal efforts to open a nuclear waste repository at the Yucca Mountain; the alleged use of explosives and open pit gold mining activities on Mont Tenabo and Horse Canyon; and the alleged issuance of geothermal energy leases at, or near, hot springs, and the processing of further applications to that end.

c) The reported resumption of underground nuclear testing on Western Shoshone ancestral lands;

d) The conduct and / or planning of all such activities without consultation with and despite protests of the Western Shoshone peoples;

e) The reported intimidation and harassment of Western Shoshone people by the State party's authorities, through the imposition of grazing fees, trespass and collection notices, impounding of horse and livestock, restrictions on hunting, fishing and gathering, as well as arrests, which gravely disturb the enjoyment of their ancestral lands.

f) The difficulties encountered by Western Shoshone peoples in appropriately challenging all such actions before national courts and in obtaining adjudication on the merits of their claims, due in particular to domestic technicalities.

C. Recommendations

8. The Committee recommends to the State party that it respect and protect the human rights of the Western Shoshone peoples, without discrimination based on race, colour, or national or ethnic origin, in accordance with the Convention. The State party is urged to pay particular attention to the right to health and cultural rights of the Western Shoshone people, which may be infringed upon by activities threatening their environment and/or disregarding the spiritual and cultural significance they give to their ancestral lands.

9. The Committee urges the State party to take immediate action to initiate a dialogue with the representatives of the Western Shoshone peoples in order to find a solution acceptable to them, and which complies with their rights under, in particular, articles 5 and 6 of the Convention. In this regard also, the Committee draws the attention of the State party to its General recommendation 23 (1997) on the rights of indigenous peoples, in particular their right to own, develop, control and use their communal lands, territories and resources.

10. The Committee urges the State party to adopt the following measures until a final decision or settlement is reached on the status, use and occupation of Western Shoshone ancestral lands in accordance with due process of law and the State party's obligations under the Convention:

a) Freeze any plan to privatize Western Shoshone ancestral lands for transfer to multinational extractive industries and energy developers;

b) Desist from all activities planned and/or conducted on the ancestral lands of Western Shoshone or in relation to their natural resources, which are being carried out without consultation with and despite protests of the Western Shoshone peoples;

c) Stop imposing grazing fees, trespass and collection notices, horse and livestock impoundments, restrictions on hunting, fishing and gathering, as well as arrests, and rescind all notices already made to that end, inflicted on Western Shoshone people while using their ancestral lands.

11. In accordance with article 9 (1) of the Convention, the Committee requests that the State party provide it with information on action taken to implement the present decision by 15 July 2006.

BARRICK'S **DIRTY SECRETS**

COMMUNITIES WORLDWIDE RESPOND TO **GOLD MINING'S IMPACTS**

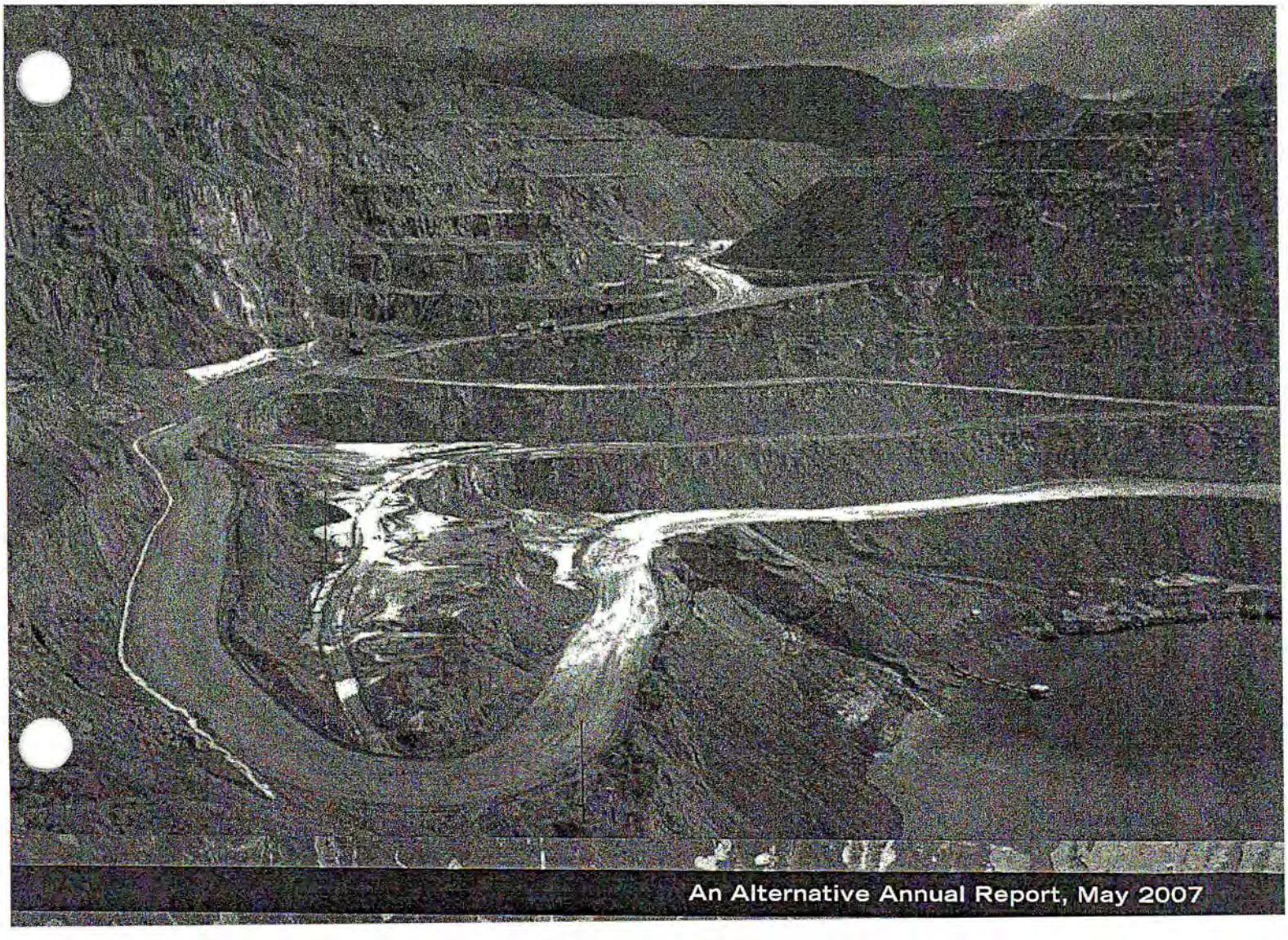


TABLE OF CONTENTS

Title Credits: Design by Tim Simons; Photo: Marinduque Mine Pit (page 18), Catherine Coumans

Top photos from left to right: March against Barrick in Vallenar, Chile June 2005 (page 24), Luis Manuel Claps; Small-sclae Miners in Tanzania (page 5), Mustafa Iroga; Lake Cowal mine convergence (page 6, 24), Natalie Lowrey

Fact:

Mining Enterprises

Use 7-10% world energy

Output < 1% world GNP

Jobs < 0.5% world jobs

SOURCE: "EL EXILIO DEL CONDOR: HEGEMONIA TRANSNACIONAL EN LA FRONTERA. EL TRATADO MINERO ENTRE CHILE Y ARGENTINA" (OLCA), 2004.

BLM -
Read - Review & dew & I Reject
Nevada is NOT a waste land.
Look at Nevada as Your home on
Back Yard for The Young.
Look at human Rights Violations.

INTRODUCTION

This report, a profile of Barrick Gold, the world's largest gold mining company, is an illustration of what is wrong with the gold industry today. In these pages, you will find numerous examples in which Barrick's interests and the interests of the communities within which it operates are pitted directly against each other. From avoiding responsibility for the destructive environmental legacy of their projects or aligning itself with corrupt politicians, to employing police who violently suppress (and sometimes kill) mine critics, Barrick's power in these struggles creates a compelling case for intervention.

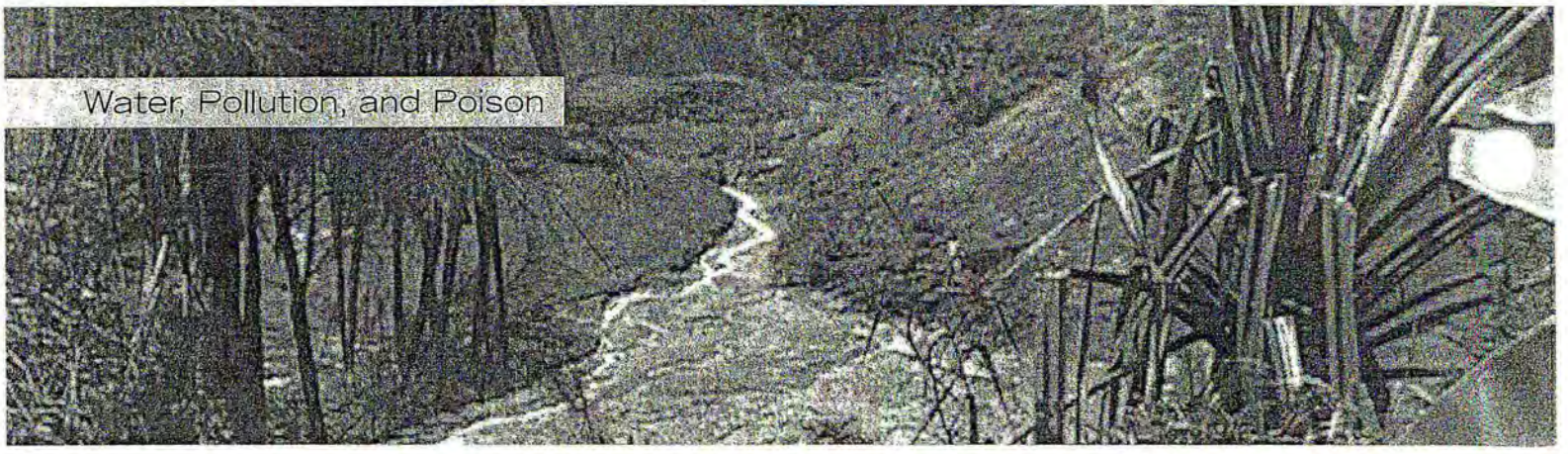
The community groups fighting Barrick include members ranging from local government and tribal officials, to assemblies of mothers against mining and other grassroots groups that attract thousands of supporters. Their work is courageous and dedicated, as it is dangerous and exhausting; and it serves to illustrate the on-the-ground reality for Barrick and other companies like it. Needless to say, this rarely voiced perspective on mining does not bode well for the industry as a whole, as it comes from the people who are immediately affected by its operations.

This report also serves to illustrate that these issues are not isolated instances of abuse, but are part of a system and framework within which these abuses are inevitable. Canada, where Barrick is based, is home to 60 percent of the world's mining corporations, which run operations across the globe. Despite being a leader in this industry, Canada has not taken the lead on mediating or taking responsibility for the behavior of their corporations abroad.

As a consequence of this negligence, Canada has drawn criticism from around the world, first by environmental, religious and human rights organizations, and now increasingly from international institutions, such as the United Nations. Even the Canadian government has started to recognize the harsh reality accompanying the presence of their mining industry abroad, which is characterized by environmental destruction, political corruption, community struggles, human rights abuses, and massive amounts of water consumption.

2006 marked the year of the first National Roundtables on Corporate Social Responsibility and the Canadian Extractive Industry in Developing Countries, a forum that was organized in reaction to a 2005 Report from Canada's Parliamentary Standing Committee on Foreign Affairs. The standing committee's report admitted that Canada does not have laws ensuring that Canadian mining companies "conform to human rights standards, including the rights of workers and indigenous peoples." But, despite overwhelming evidence that the self-regulation and voluntary measures adopted by mining companies are not sufficient to guarantee these rights, a binding legal framework to ensure these rights has yet to be pursued by the Canadian Government.

We hope that this broad collection of case studies examining Barrick's operations around the world will serve to expose an industry rife with abuse, while supporting the individual community-based struggles against this company worldwide.



ENVIRONMENT:

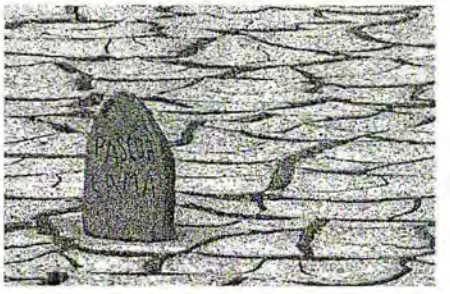
WATER IS WORTH MORE THAN GOLD

Water depletion is a major negative consequence of gold mining, as you can see highlighted in the Lake Cowal, Pascua Lama, and Western Shoshone case studies. The large amount of water required to run a gold mining operation exacerbates its impact on local communities, many of which are already experiencing drought.

The daily water consumption at Barrick's Lake Cowal mine in Australia is more than of the entire Lismore district (a major regional center in the Northern Rivers region of the state.) Since the mine started operations, the water level near it has dropped from 20 meters to 50 meters below ground level. The mine is licensed to use up to 3,650 million liters a year over the next 13 years and will likely exceed that figure. Meanwhile, the region surrounding the mining site is enduring its eighth year of drought.[1]

At its Pascua Lama mine, Barrick is disturbing 10.2 acres of three glaciers[2], and has called for tunnels to be dug underneath them. The exploration and prospecting phase (1990's) has already been linked to the depletion of glaciers.[3] Barrick attempted to blame global warming for the melting, but those claims have been disproved.[4]

In addition to the large-scale melting of the glaciers, Barrick is proposing to extract additional water in Chile to run its mine and factories. The estimated requirement is up to 42 liters per second to be taken from the Estrecho and Toro Rivers. [5]



On average, it takes 79 tons of waste to extract one ounce of gold.

Metals mining produces 96 percent of the world's arsenic emissions.

Acid Mine Drainage and Heavy Metal Contamination

Open pit mining creates great waste for a small yield. On average, it takes 79 tons of waste to extract one ounce of gold, according to a conservative estimate by the No Dirty Gold campaign, a project of EarthWorks and Oxfam. The process involves grinding up ore, and then exposing it to cyanide in order to extract the gold. Sulfides in the crushed rocks interact with air and water to create sulfuric acid, which in turn creates acid mine drainage (AMD).

In and of itself, AMD is harmful to ecosystems because it makes water too acidic to support life. Additionally, the sulfuric acid in AMD leaches out other substances from the waste ore, such as arsenic, cadmium, lead and mercury, which can have disastrous health effects, and can contaminate both air and water. Metals mining has been linked to 96 percent of the world's arsenic emissions. [6]

A recent report by the University of Nevada[7] found startlingly high mercury concentrations in the air around a number of northern Nevada gold mines. The highest concentration was measured at Barrick's Marigold Mine (3120 ng/m3).

Cyanide

Cyanide is the chemical-of-choice for mining companies to extract gold from crushed ore, despite the fact that leaks or spills of this chemical are extremely toxic to fish, plant life and human beings. Cyanide is a deadly chemical, used in the gas chambers of the Second World War and on death row in the United States between 1930-1980. The chemical has caused havoc in water systems across the world with over 30 spills in the last five years.[8] *(See Lake Cowal spread for more information on cyanide)*

Cyanide has caused havoc in water systems across the world with over 30 spills in the last five years.

TITLE PHOTO: PAPUA NEW GUINEA, DAVID MARTINEZ; "PASCUA LAMA=DESERTIFICATION AND DEATH", DAVID MODERSBACH

ENVIRONMENTAL SCANDAL:

SAN GUILLERMO WILDERNESS:
GOLD MINING IN A WORLD HERITAGE BIOSPHERE RESERVE?

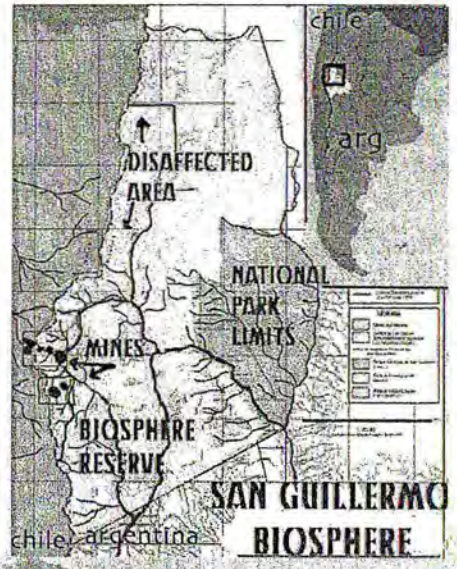
Argentina's first World Biosphere Reserve is the San Guillermo Wilderness, high in the Andes range in northwest province of San Juan, which was given legal protection in 1980 by the United Nations Educational, Scientific and Cultural Organization (UNESCO).[9] The 900.000 hectare reserve provides crucial ecological services for the entire Southern Andean Steppe bioregion: It provides habitat and mating grounds for hundreds of animal species, such as Andean flamenco, vicuñas, guanaco and ñandu; it is home to many unique and important plant species; it regulates bioregional climate patterns; and most importantly, it is the birthplace of the waters that flow down into an enormous larger region of Argentina and Chile.

The heart of San Guillermo lies in its glaciers nested in its highest peaks. These glaciers, some brilliant white, others underground and invisible to the eye, regulate the runoff forming the Cura and Jáchal rivers, the only water supply to the delicate desert farmlands of northern San Juan. These same glacier "water factories" also supply and regulate the waters flowing westward to the Pacific through Chile's fertile Huasco Valley. The water supplies created and regulated within San Guillermo are essential to the life of ecological and social systems downstream.

In 1989, the very heart of the San Guillermo World Biosphere Reserve was "cut away," stripped from the UNESCO reserve. In a midnight session of the San Juan legislature, corrupt provincial lawmakers secretly drafted a bill (N°5959/89) "disaffecting" a strip of some 170,000 hectares from UNESCO protection – land that had already been prospected for mining and would later be transferred to Barrick Gold Corporation for its Veladero and Pascua-Lama projects. [10]

The change in the law was not announced publicly, provincially or even to UNESCO until ten years later in 1999, after the mapping and initial explorations were completed. During these years, land rights were covertly and often illegally bought for pennies per acre[11] by well-connected local officials, who simply signed public land over to subsidiaries of Barrick Gold for handsome profits.[12] They often purchased the land from poor and indigenous peoples.[13]

This 1989 "disaffection" is now the "legal" basis for Barrick's open-pit gold mining operations among the glaciers of San Guillermo World UNESCO Man and Biosphere Reserve.[14] The protests of local and national community and environmental groups ,as well as UNESCO, have been completely ignored by provincial authorities. UNESCO also claims it has no power to enforce the respect of the limits of this now gravely endangered Biosphere.[15]



BELOW: ÑANDÚES RUN WILD NEAR PASCUA LAMA. PHOTO: DAVID MORDERSBACH

POLICE REPRESSION:

WARNING: RESISTANCE TO BARRICK MAY LEAD TO **DEATH**

On April 11, 2007 Marvin Gonzalez Castillo, a 19 year old boy, was killed by two bullets to his torso. He was a victim of police repression against protests organized by social and ecological organizations, as well as the local government of Ancash, to demand the cancellation of the contracts with the mining firms, Barrick Gold and Antamina*, according to community reports. The police moved in during the blocking of roads. Thirty demonstrators were also detained, most of them construction workers. One woman died of a heart attack after the police tear-gassed protesters.[27]

This protest was part of a regional 48 hour strike, was part of a series of coordinated actions that included thousands of marchers throughout the Ancash region.

Two days before the shooting, on the first day of actions, a group from the communities of Shecta and Santiago Antunez de Mayolo attacked peaceful demonstrators as they protested against Barrick's continued exploration of the Condorwain mountain area. They were supported by members of the National Police and workers from the Barrick Misquichilca mining company. The confrontation between community members left seven people injured, among them the president of the Campesino community of Cruz Pampa and leaders of other villages near Condorwain.[28]

Another group of residents of Huaraz met in the center of the city to march in opposition to the mining activities in different locations throughout the Ancash region.[29]

LONGSTANDING ANGER WITH BARRICK

This isn't the first time that people have died in a confrontation with police at an anti-mining demonstration. On May 5, 2006, Joel Martel Castromonte, a 25 year old agronomy student and Guillermo Tolentino Abat, a 42 year old miner were shot dead by police. They were victims of the violence that began when hundreds of community members gathered in Huallapampa to request a salary increase from Barrick Gold. When Barrick officials refused to raise pay, community members used stones and tree trunks to blocked access roads to the mines. Police, called by Barrick, responded with tear gas bombs, and the protesters answered with stones. According to police spokespeople, the mining company employed 30 police agents in its security force.[30]

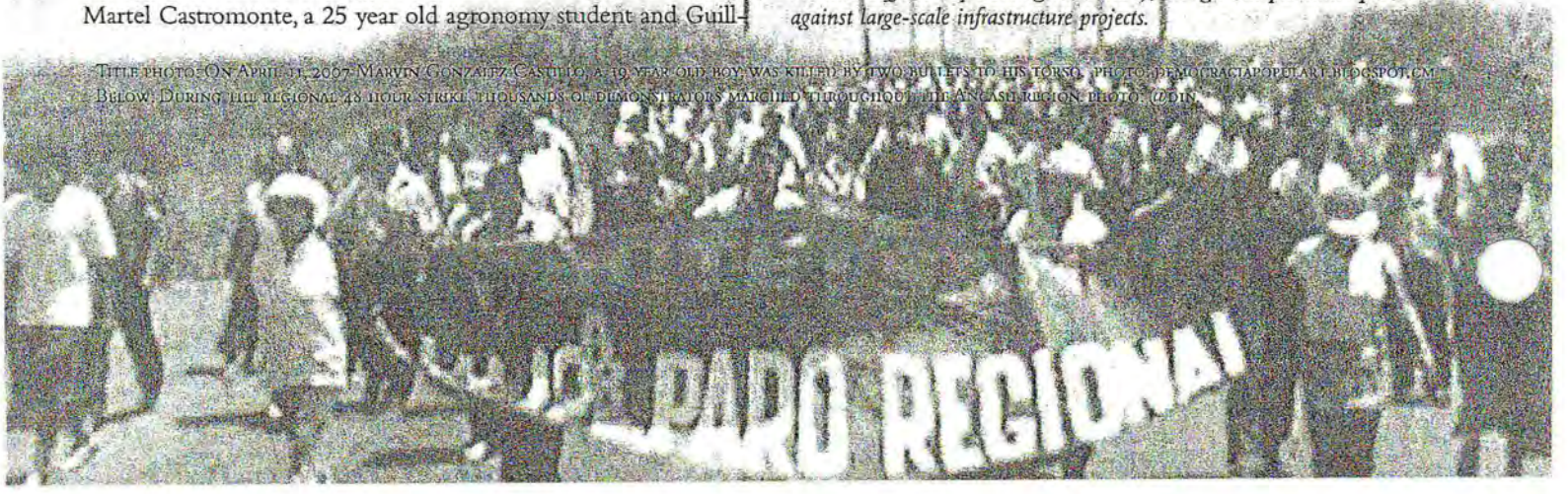
This isn't the first time that people have died in a confrontation with police at an anti-mining demonstration.

Barrick suspended operations until security was reestablished, but not before the injuries and deaths. The following day, thousands of campesinos from the 18 communities in the high reaches of the Sechta mountains where Barrick operates the Gold Pierina Mines, protested. They demanded investigations of the deaths and justice.[31]

One year before in the same area, riot police had clashed with thousands of protesters demonstrating against a court decision allowing Barrick to waive $141 million in taxes.[32]

Police used tear gas to disperse the farmers, teachers, and striking city hall workers who had gathered on the mountain road leading to Barrick's Pierina mine in the Ancash region, authorities said.[33] Twenty people, including two police officers, were injured in the clashes and Ancash Mayor Lombardo Mautino was hurt by a rubber bullet, Ancash city hall official Pelayo Luciano told *Reuters*.[34]

**Barrick officials say that this particular death occured at a protest in Chimbote, a coastal region in the Ancash Region, 500 kilometers away from the mines. It should be noted this protest was part of regional protests that were called for by CORECAMI Ancash (The regional Confederation of Communities Affected by Mining in Ancash), though this particular protest was against large-scale infrastructure projects.*



TITLE PHOTO: ON APRIL 11, 2007 MARVIN GONZALEZ CASTILLO, A 19 YEAR OLD BOY, WAS KILLED BY TWO BULLETS TO HIS TORSO. PHOTO: DEMOCRACIAPOPULAR.BLOGSPOT.COM
BELOW: DURING THE REGIONAL 48 HOUR STRIKE, THOUSANDS OF DEMONSTRATORS MARCHED THROUGHOUT THE ANCASH REGION. PHOTO: @DIN

HUMAN RIGHTS:

LIVES AND LIVELIHOODS IN TANZANIA AND PAPUA NEW GUINEA

Human rights abuse used to be the work of repressive governments, but increasingly corporations are getting into the act. In late 2005, Canada's Parliamentary Standing Committee on Foreign Affairs lamented that "Canada does not yet have laws to ensure that the activities of Canadian mining companies in developing countries conform to human rights standards, including the rights of workers and indigenous peoples." [16]

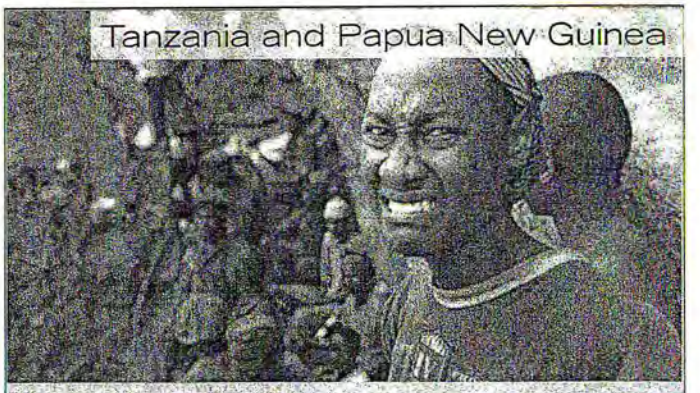
Barrick was linked to a number of these abuses, including the forced evictions of small scale miners and residents,[17] the alleged murder of mine critics at their Bulyanhulu and North Mara gold mines in Tanzania, and the killing of alluvial miners by mine security personnel in Papua New Guinea. Many violent clashes have also occurred between police and activists opposing Barrick's mining operations in Peru, Chile, and Argentina.[19]

Some of the abuses at Bulyanhulu mine occurred before Barrick took over. In August 1996, Canada-based Sutton Resources Ltd evicted some 30,000 to 250,000 miners from its Tanzanian operation and allegedly killed more than 50 miners by burying them alive with a bulldozer, according to Tanzanian environmental lawyer Tundu Lissu.[20] Barrick bought this mine three years later and has done nothing to bring the perpetrators to justice or to compensate victims' families. After the mass evictions, Lissu claims that hundreds of villagers, including community leaders and prominent locals, were targeted for illegal arrests, criminal prosecutions and long-term imprisonment. *(see sidebar)*

Lissu's claims are supported by an independent fact finding mission that included representatives of MiningWatch Canada, Friends of the Earth-US, the Dutch NGO Both ENDS, and a Canadian journalist. After visiting the Tanzania in March 2002, the group concluded that "the intensity and seriousness in the telling of the stories of the alleged evictions, the violence and brutality of the police and mining officials, the level of detail, as well as the willingness of the Bulyanhulu residents to take significant risks to their own personal safety to come and speak with us, impressed the members of the mission, as did the willingness of apparently 250 others who waited several hours for us to arrive in Bulyanhulu. The mission members thought that these factors lent weight to the credibility of the allegations." [21]

Subsequently, the Compliance Advisor/Ombudsman of the World Bank issued a report refuting LEAT's claims of mass murder and the number of people displaced, based on evidence supplied by the Tanzanian government and Barrick Gold. LEAT published a detailed response to the CAO report on their website, which challenged this evidence.

Similarly, Barrick's North Mara mine suffered great human rights abuses under its predecessor, Canada's Placer Dome. Lissu, who has been jailed for anti-mining activism, claims that Barrick's security operatives at the North Mara mine have since been linked to six violent deaths and that the killings are part of a strategy to silence mine critics. [22]



MEN WHO MOIL FOR GOLD PHOTO: MUSTAFA IROGA

"Mr. Iroga's farm was bulldozed while he himself was serving a 30 months prison sentence for allegedly inciting villagers to re-occupy their farmlands and mine pits in June 2001. In the aftermath of the August 2001 forced evictions by Tanzania security forces, the Iroga brothers, then Kewanja Village Chairman Augustino Nestory Sasi, Chacha Zakayo Wangwe (now elected Member of Parliament for Tarime), John Mang'enyi (then elected Member of Tarime District Council for Kemambo Ward) and Raphael Dede (then Nyabigena Village Chairman) were arrested and charged with inciting the villagers. Mustafa Iroga and Chacha Wangwe would be acquitted in May 2002 but the rest were sent to prison for 30 months. In February last year the High Court of Tanzania annulled the convictions and sentence declaring that there never was any evidence to convict the four community leaders. While serving their sentences, however, Neto Sasi was - with 13 other villagers - charged with a fictitious charge of armed robbery and jailed for 30 years in April 2003. We got them out on appeal to the High Court of Tanzania in December 2004. The latter declared once again that there never was evidence of wrong-doing on the part of the villagers." – Tundu Lissu, Lawyers' Environmental Action Team (LEAT), 2006 [26]

CorpWatch contacted Barrick's Vince Borg to ask for Barrick's response to these allegations, which were made in July of 2006, but Barrick has not yet responded.

In Papua New Guinea, the Akali Tange Association (ATA) emerged in 2004 to address the on-going human rights abuses perpetrated by the Porgera mine security. According to ATA organizer Jeffery Simpson,[23] 39 people have died and 2,000 have been injured, some by unsafe working conditions and others in the chaos resulting from security crackdowns. An additional 3,000 to 4,000 people have been jailed.

Much of the conflict arises over whether the local tradition of alluvial mining became illegal under arrangements and contracts held by the Porgera gold mine. ATA claims that no Ipili agreed to give up traditional rights.[24]

The company has hired a 400-man security team, which it calls Asset Protection Department, to guard the facility. Over the years, what started as a congenial arrangement has turned into small-scale armed conflict that has caused hundreds of injuries, sometimes 40 to 50 a day, according to the *Ottawa Citizen*.[25]

CASE STUDY:

SACRED HEARTLAND OF THE WIRADJURI NATION

THE CAMPAIGN

Australia's Lake Cowal, "the Sacred Heartland of the Wiradjuri Aboriginal Nation," is the largest inland lake in New South Wales (NSW). A wetland of national and international significance, the lake also provides habitat for many threatened species and birds listed under the International Convention on Wetlands (the Ramsar Convention).[35]

For seven years, a community campaign has focused public attention on the cultural and ecological significance of Lake Cowal. Australian organizations supporting the campaign include the Mooka and Kalara Traditional Owners within the Wiradjuri Nation; the Rainforest Information Center; the Indigenous Justice Advocacy Network; the New South Wales Greens Party; Friends of the Earth Australia; Peacebus' Cyanide Watch; and the Coalition to Protect Lake Cowal, an alliance of more than 21 Australian and 40 international groups.

> The mine continues to use enormous amounts of water from a region stricken by the worst drought in recorded history, affecting local communities and water sources. Barrick's bore water licences allow it to take up to 17 million liters per day from underground sources.

THE LAKE

An ephemeral lake lying 45 km north-east of West Wyalong in the Lachlan River plain within the Murray-Darling Basin, Lake Cowal is full an average of seven out of ten years, but can remain dry as it is now, for many years. During major floods, the lake becomes an inland sea, connecting to the Lachlan River, which flows into the Murrumbidgee and then to the Murray, Australia's largest river, now one of the world's ten most threatened rivers.[36] Lake Cowal is included in Australia's Directory of Important Wetlands and listed in the Register of the National Estate.[37]

THE MINE

The Cowal Gold Project covers approximately 26.5 square kilometers of this environmentally fragile region. In 1996, the New South Wales government refused an application from North (WA) Ltd. to mine gold at Lake Cowal on environmental grounds. But in February 1999, despite continuing environmentalists' concerns, a month before a state election and after a second commission of inquiry, the government approved the mine.[38] Rio Tinto bought North in 2000 then sold its Cowal Gold Project interest to US-based Homestake. In December 2001 Homestake merged with Barrick Gold of Canada.

On March 27, 2006, the mine, with a projected life of only 13 years, became fully operational. A month later, Barrick poured the mine's first gold. Now, the company is excavating108 million metric tons of low- to medium-grade ore from an open-cut pit that lies within high water level on the lake's western edge. The final pit needed to extract around 2.7 million ounces of gold will be 1 kilometer long, 825 meters wide, and 325 meters deep.[39] The Coalition to Protect Lake Cowal estimates that this pit will be comparable in size to Uluru (Ayers Rock), Australia's largest monolith.

CULTURAL HERITAGE

Wiradjuri traditional lands cover a third of the NSW land mass. Traditional Owners oppose the mine and charge that Barrick and its predecessors ignored demands to protect cultural objects.[40]

Barrick desecrated sacred ground when it cleared the way for the mine and laid water pipes and an electricity transmission line. The company also felled dozens of river red gum trees that had sheltered Wiradjuri people from the elements for hundreds of years, and held generations worth of historic markings. Wiradjuri cultural items and places have been damaged or destroyed including tens of thousands of stone artifacts, ancient ceremonial areas, marked trees, and traditional camp and tool-making sites.

Artifacts hold individual meaning, but piecemeal artifact col-

lection compromises the integrity of the site and the larger landscape of spiritual significance. Independent archaeologists have dated some local Wiradjuri sites to between 2,000 and 4,000 years old--contemporaries of the Egyptian pyramids. Given Lake Cowal's ancient origins, more archaeological work will likely reveal a much older heritage. Barrick has reportedly collected more than 10,000 artifacts from the mine area, but has refused to release details.[41]

WATER

The mine's continuing use of enormous amounts of groundwater and now the Lachlan River affects local communities and water sources already enduring the worst drought in New South Wales' recorded history. Barrick's bore water licences allow it to take up to 17 million liters per day from underground sources and up to 3650 million liters in any one year.[42] A 30-metre groundwater level drop in October 2006 had up to 80 landholders anxiously watching their livestock and domestic supplies. In late 2006 Barrick cut a deal with local irrigators to use water from the Lachlan instead of bore water.[43] Barrick is building an onsite dam, but it will be useless unless significant rain falls. On April 19, Australia's Prime Minister announced that Murray-Darling irrigators faced a water shut-off unless it rained within the next two months.[44] Barrick and the government will not reveal how much water the company is taking from ground and surface water sources combined and whether its deal with irrigators will continue.

CYANIDE

At Lake Cowal, Barrick processes very low-grade ore with minimal residues of gold. Leaching gold from the ore requires 6,613 tons [6,000 metric tons] per year of cyanide and other hazardous chemicals.[45]

The copious waste from this process flows into open pits separated from the lake by an earthen wall or "bund." The mine tailings are stored within the floodplain in unlined dams 3.5 kilometers from the lake. The two tailings ponds, containing highly toxic chemicals, are a tempting habitat for migratory birds.[46]

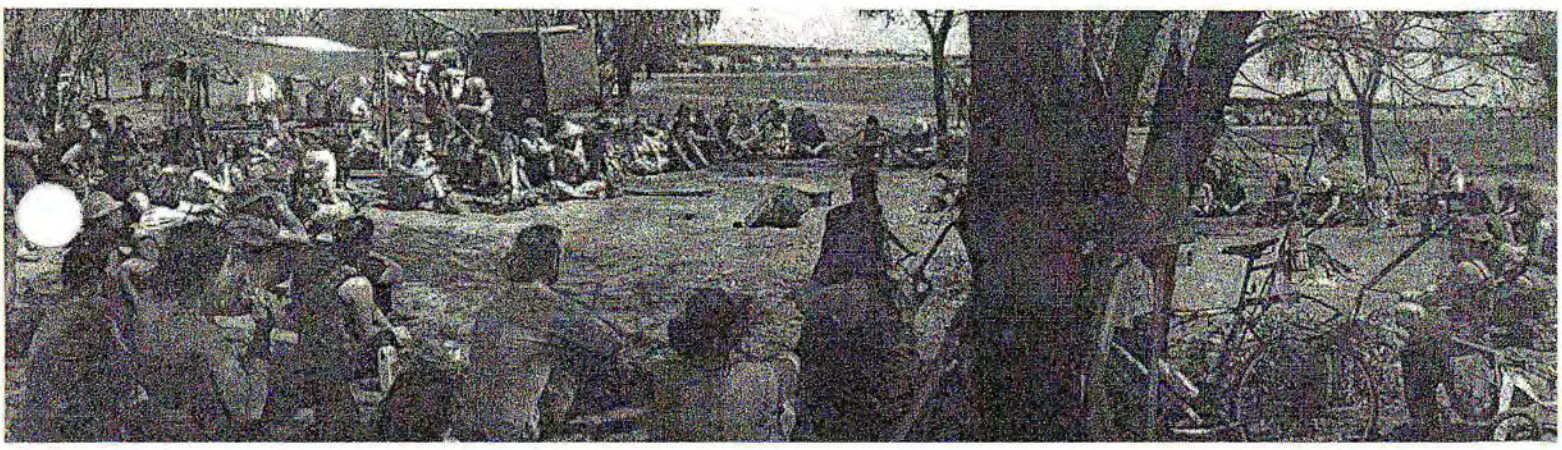
Another danger comes from transporting the poisonous cyanide. Up to 6,090 metric tons of the chemical travels 1600 kilometers to Lake Cowal every year from Orica's plant in Gladstone, Queensland. Trains and trucks carry the cyanide to Lake Cowal over 20 rivers, through ten national parks, and past 200 towns. The route traverses densely populated areas of Australia's largest city, Sydney, and the World-heritage-listed Blue Mountains. A 1992 train crash at a Condobolin, NSW level crossing killed two and spread 40 metric tons of cyanide pellets across the ground.[47]

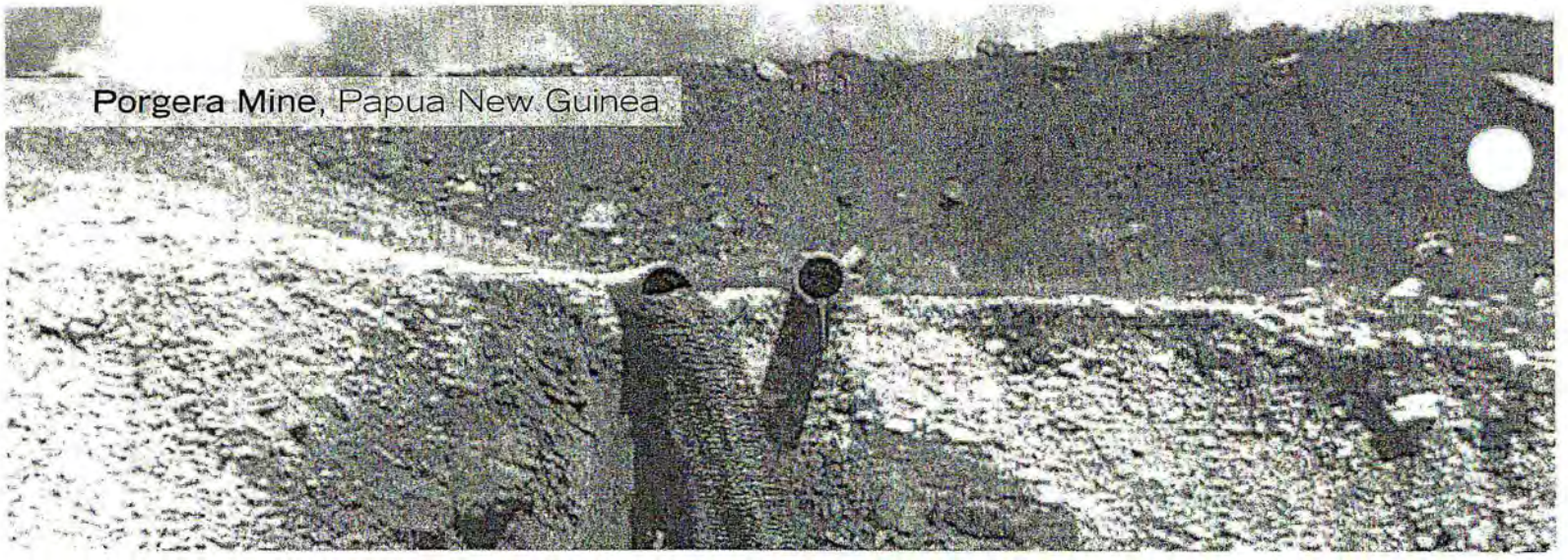
PATTERN OF VIOLATIONS

Barrick Gold, which operates nine mines in Australia, has been accused of environmentally unsound practices, mining-related accidents, and safety violations. For example, in January 2003, a 26-year old woman was killed in a pit-wall collapse at a Barrick mine in Western Australia. More recently a man driving a truck to the Lake Cowal mine, to collect used muriatic acid, hit a tree at Bumbaldry, NSW. Workers for Barrick sub-contractors have also complained of poor employment conditions.

A 2004 Western Australian government's report on the Kalgoorlie Super Pit, a Barrick-Newmont joint venture, found a large area around the Fimiston 1 tailings dam was affected by cyanide and heavy metal contamination, elevated groundwater cyanide levels, and increased salinity. Kalgoorlie Consolidated Gold Mines (KCGM) admitted on July 27, 2005, that the mine's roaster and carbon kilns were emitting five to seven metric tons of mercury per year. In April 2007 the Western Australian authorities fined KCGM $25,000 for sulphur dioxide emissions that affected Coolgardie residents.[48]

TITLE PHOTO: PELICANS BY THE FLOCK HUNTING THROUGH THE SHALLOWS OF LAKE COWAL. LAKE COWAL IS AN EPHEMRAL LAKE, IT IS FULL AN AVERAGE OF SEVEN OUT OF TEN YEARS. THIS AREA IS FACING THE WORST DROUGHT IN 100 YEARS. LAKE COWAL HAS BEEN SUBSTANTIALLY DRY SINCE OCTOBER 2001.
SOURCE: WWW.ECOPIX.NET
BELOW: LAKE COWAL SUPPORTERS LISTENING TO WIRADJURI TRADITIONAL OWNERS AT THE GATES OF BARRICK'S MINE AT LAKE COWAL, NSW OCTOBER 2004.
PHOTO: NATALIE LOWREY





CASE STUDY:

GOLD MINE TRANSFORMS PACIFIC ISLAND

The Ipili people of Papua New Guinea had the misfortune of living on top of a lot of gold. When mining companies arrived in their region and wanted to make a deal to start a gold mine, the locals thought they could work out an arrangement that would grant them benefits from all of the profits that would be made. Unfortunately, things did not work out the way they hoped.

Landmark deal

The agreement reached between the locals and the company was hailed by the industry as a landmark deal because up to that point, landowners had seldom if ever been involved in negotiations at all. Porgera Joint Venture (PJV) company, the entity that Placer Dome created to run the mine, would pay the Porgerans through the PNG government for the use of their land, pay dividends to the families of the original landowners based upon how much gold was mined, and would build a school and other buildings for the town.[49]

Landscape eroded

From the beginning, however, there were allegations of dishonesty. People claim that the signers of the contracts were illiterate at the time, and that they were given alcohol during the negotiations.[50] Things got worse when in the early 1990, the most accessible veins of ore were depleted. It was then that the company turned to open pit mining, began blasting away the hills, using cyanide to leach gold and other toxins from the rubble, and dumping the poison waste into the local streams. In fact, whereas in 2000, the Porgera mine produced 6.6 tons of waste per ounce of gold produced[51], in 2006, that figure was up to approximately 97.6 tons of waste per gold ounce.[52]

Although PJV paid villagers to relocate to new houses in the hills above the despoiled valley the homes started sinking into the ground or sliding slowly down the hill as mine debris eroded the landscape. As time passed, the villagers began to measure the deal and their cheap tin houses against the despoiled environment and the wealth the mining company has extracted.

Increasingly the villagers grew to rely on the mine for sustenance, whether through wages or lease payments. Many of them are now "reeling from the impact of a cash-for-land deal that has turned their traditions upside-down and their ancestral home into an industrial moonscape patrolled by guards and police," according to an article by the *Ottawa Citizen*.[53]

Between 8 and 39 people have been killed in fights between company security men and alluvial miners (Placer Gold admitted to eight deaths[54], while ATA puts the number at 39 mine-related deaths[55]). The company's security men are accused of beatings and rapes against the villagers. Many people search for gold in and around the mine, and as the mine itself has grown bigger and bigger, and the local population exploded, clashes have erupted over access to the precious yellow ore.

When would-be gold collectors have approached company property, guards have fired at them in the past, claims the Akali Tange Association (ATA), an organization that advocates against human rights abuses in the area.[56]

Growing inequity and changing social structures exacerbated dissatisfaction between the mining company and the locals. New arrivals seeking work at the mine, who currently account for 40 percent of the 10,000 people living around Porgera, and relatives of landowning families began demanding a share of the monetary compensation from their kin. This phenomenon is perfectly normal among Papua New Guineans who share any fortune, good or bad, with their tribe and extended family. Typically a group of approved elders make a judgment awarding cash to the injured parties who divide it among their relatives.

Workers organize

Stanley Kaka, a 44-year-old former mineworker and union organizer, embodies a living history of the Porgera region. As a child in the 1970s, he and the other village males slept in a longhouse with hammock-bunks lining the walls. Nearby was a similar building for the women and children. "We would stay up late every night", he recounts, "telling stories, talking. In the morning we all rejoined our families and went to work in the gardens. Everyone wore grass loincloths and hunted with bows

and spears. And so now we have gone from the Stone Age to the Computer Age in one generation." [57]

In 1989 Kaka moved to Porgera from a nearby village and started working at the mine. He immediately noticed how unfairly the employees were treated. People worked long hours for low wages and were exposed to toxic chemicals, he says. He and other workers formed the Porgera Allied Workers' Union with Kaka as its first president. The union won overtime pay, travel compensation for miners who came from distant townships, and special risk pay for the men who worked in the dangerous tunnels deep under Porgera's hills.

It was during one of the union's actions, a "sitting protest" inside of a tunnel, that the company security men clashed with the miners and angry workers destroyed a digging machine. Mine officials blamed Kaka for starting the trouble and fired him.

"This is my land"

"I told the company that I will be here until you leave this place. This is my land", he said. For the last 16 years he has been "not leading, but advising the young generation, the young people who are coming up and saying this is no good. We should at least get maximum benefit out of our resources that the company's taking out".

Porgera is a town with one of the world's largest gold mines and no paved streets. As helicopters ferry wealth overhead, crews of mud-covered young men with picks and orange plastic vests wedge rocks and gravel into deteriorating dirt roads to counter erosion from frequent rains. The overall sense is of an outside corporation extracting what it can at minimum cost, ready to pack up and clear out when the gold supply runs dry.

Rich resources, poor people

Set in the brilliant South Pacific, Papua New Guinea is rich in resources, in ecology, in languages and cultures – and yet the people are poor.

Back in Porgera, local ATA organizers are now working on ways to hold Barrick accountable for a series of incidents in which mine security forces allegedly injured workers.

The company is trying to negotiate a settlement. PJV's Stephenson told the *Papua New Guinea Post Courier*: "We have reached a stage where we ourselves are also not prepared to accept any more deaths. We need to work together to find solutions". [58]

The men of ATA, however, remain skeptical. "But", said one man, motioning forcefully with his arms, "if nothing is resolved, we will shut down this mine in less than a day. We can do it anytime we want to and we will." The Ipili of Porgera are determined to make sure they are not left with just dirt roads and despoiled hills when the gold finally runs out.

A WOMAN'S PERSPECTIVE:

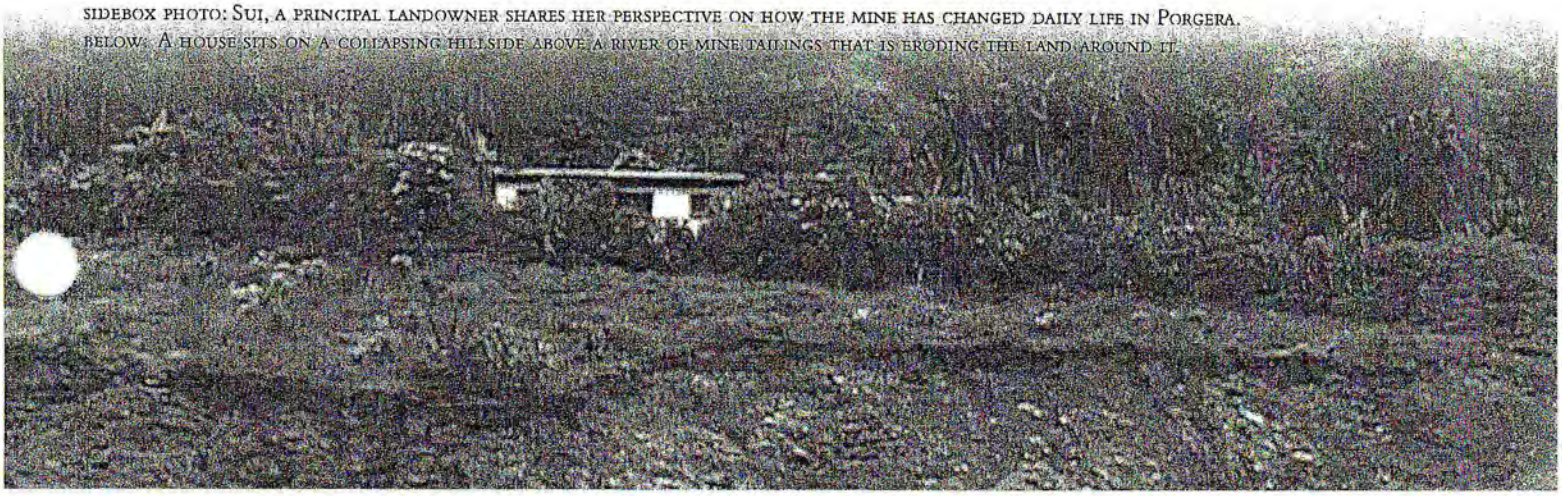
SUI, A PRINCIPAL LANDOWNER

How has the mine changed life?

Now I have more problem and living a harder life. in the olden days I used to good drink fresh clean water with paste now [I am] drinking tessness (sic) water. We used to have good bananas, and now we got bananas that is not sweet, and the bananas are not bearing good fruits and even the covers as well. We used to have good kava in the garden, but under the conditions most kavas have gone, and now one type of kava is in the place.

In the olden days before the mining, all the women were being properly protected and secured by the men through the sub clan. But now when the mine came and all things kind of came apart: tribes not living together, women all scattered over, and they are not well-protected. And now that money is scarce and taken the place some ladies have money... and those that don't have the money they have no place to move to, they've got no money to give to bus drivers, they are not living in good house, they are living in a school settlement out in the bushes, and through that and some ladies are caught into sicknesses like AIDS and it is hopeless now. [59]

TITLE PHOTO: BARRICK DEPOSITS MINE TAILINGS DIRECTLY INTO THE RIVERS. ALL PHOTOS: DAVID MARTINEZ
SIDEBOX PHOTO: SUI, A PRINCIPAL LANDOWNER SHARES HER PERSPECTIVE ON HOW THE MINE HAS CHANGED DAILY LIFE IN PORGERA.
BELOW: A HOUSE SITS ON A COLLAPSING HILLSIDE ABOVE A RIVER OF MINE TAILINGS THAT IS ERODING THE LAND AROUND IT.



CASE STUDY:

MEGA MINING PROJECT ENDANGERS NATURAL AND CULTURAL BALANCE

Pascua Lama-Veladero[60] is a mine project operated by the subsidiaries of the Canadian transnational company Barrick Gold Corporation[61], the Compañía Minera Nevada Ltda. (Chile) and Barrick Exploraciones Argentina S.A. They plan to set up a gold, silver and copper mine in a semi-desert region of the Andean Cordillera, on the Chilean-Argentinean border. This project is located on the source of the Huasco river system on the Chilean side, and of the Cura Valley, on the Argentinean side. In Argentina, the mine lies within the San Guillermo Biosphere Reserve territories (UNESCO, 1981) in the province of San Juan. In Chile, Pascua Lama abuts the southern border of the Atacama Desert, one of driest in the world, and intrudes into ancestral Diaguita indigenous territory.[62]

Pascua Lama-Veladero mining activities endanger the natural and cultural balance of these valleys, affecting around 70,000 people in Chile [63] and 24,000 in Argentina.[64] Pascua Lama mining directly affects mountain glaciers that are essential water sources for these regions and poses a serious threat to biodiversity.[65] The affected region is a habitat for condors, eagles, vicunas and other fauna and flora species.[66]

The area has already experience environmental impacts from the exploration and prospecting phase carried out in the 1990s - a period of multiple free trade agreements that stimulated this kind of project. A report from the Dirección General de Aguas of Chilean Government (the national agency responsible for water management) shows that the activities of this mining project have reduced the volume of glaciers Toro 1, Toro 2 and Esperanza between 50 and 70 percent between 1981 and 2000.[67] The Conconta glacier in Argentina has already been destroyed.[68]

The quality and the availability of an already precarious water supply will be threatened by the use of toxic materials such as cyanide (its use was denounced by the Declaration of Berlin, 2000) and some heavy metals. Mineral extraction methods will cause dust emissions containing particles of lead, arsenic, uranium, chromium, zinc, asbestos, mercury, sulphur, cobalt, manganese, etc.[69] Dust deposits on the surface of glaciers will accelerate the thawing process. Accumulation of toxic material will pollute the soil and the ground water table. In addition, mining operations require a large amount of water--370 liters per second[70]--increasing the pressure on an area traditionally prone to drought. According to current arrangements, Barrick Gold will get this vital resource for free, since this company owns the water rights and can decide how to use them.[71]

Pascua Lama-Veladero disrupts the ecology of the territorial area known for its agricultural and pastoral activities including the production of export grapes, olive oil, brandy, pisco, fruits, vegetables, goat cheese, etc.[72] On the Argentinean side, mining activities will adversely affect the development of tourist activities, including highly valued thermal baths.[73]

Also, territorial and ancestral rights of the indigenous Diaguita community in Chile are being violated despite the law focusing on indigenous rights (Law 19,253 of 1993 on Protection, Promotion and Development of Native Peoples of the Department of Planning and Cooperation). But this law does not adequately ensure the protection of the Diaguita's land and it's water. Corporate interests have even used this law to trespass on indigenous communities rights.[74]

During the time leading up to the construction of the mine, in 1996, Barrick acquired land rights in Chile and proceeded to set up gates blocking public pathways. This blocked shepherds[75] from moving their livestock to traditional mountain grazing grounds. Before the arrival of Barrick, this land was the subject of a legal controversy, with the Diaguita claiming that it had been usurped by a private landowner. Although the case is still in Chilean courts, the Pascua Lama project continues.[76]

Territorial appropriation by Barrick Gold includes the construction of a 6 km tunnel through the Chilean-Argentinean border to allow the transport of resources, machines and various materials needed for mining operations.[77] The tunnel will also provide the means to move mineral products to the Pacific coast where they can enter the international market. The operation of this tunnel does not include a customs system or a border checkpoint, as required by the present local laws.[78]

The Pascua Lama-Veladero project violates the self-determination rights of the local population. This mining project has set up shop through a campaign of charm and pressure on local and national authorities and on the local population. Barrick displays a public image of "a socially responsible mining corporation," promising to contribute to the progress of the region, pledging large amounts of money, offering gifts, promising job openings and assuring that the environment will be rigorously protected by it's "clean" and scientifically controlled mining procedures. However, the history of this company reveals these promises as illusory.[79]

Working conditions at the mine are disturbingly precarious. More than 50 miners have already died on the job and Barrick has released no information about the circumstances related to these fatal accidents.[80] The work is performed at very high altitudes (5,000 m above sea level) and safety standards and appropriate physical training are insufficient. Despite complaints by local residents, there are no controls to monitor and regulate the movement of many vehicles, trucks, and large machines that pose risks to the local communities living near access routes to the mine.[81]

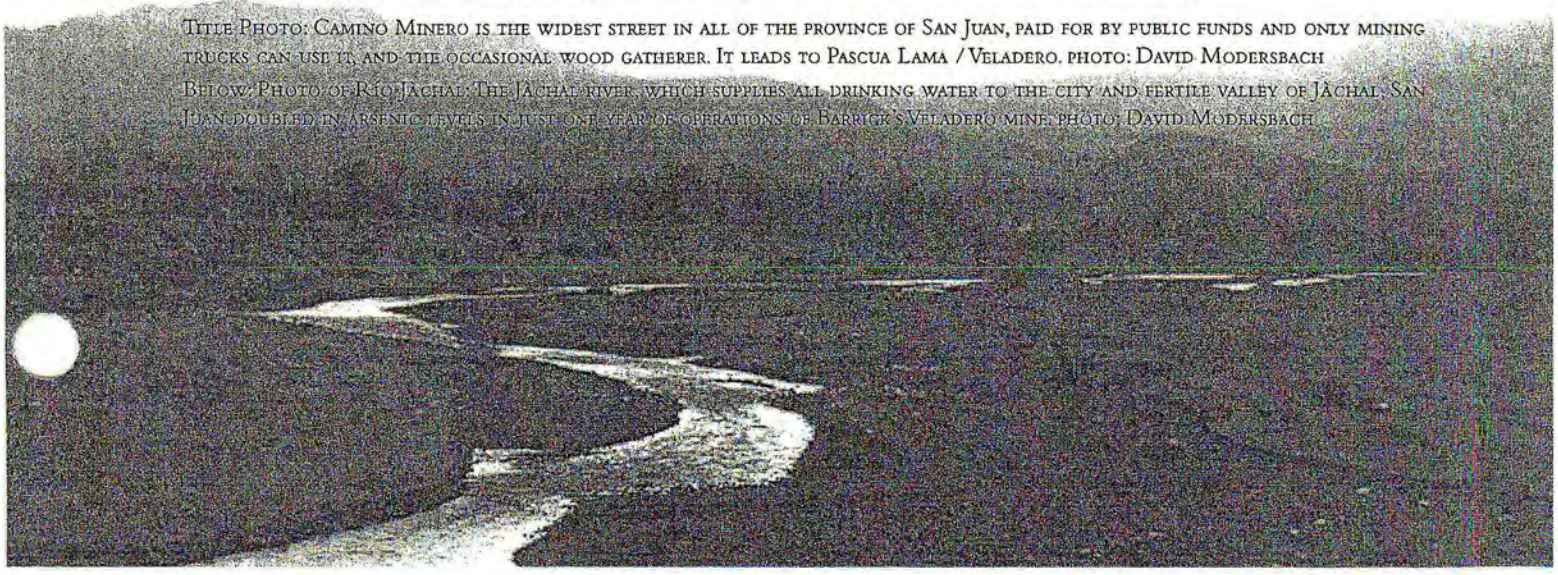
The mining company will generate enormous profits from this project, thanks, in part, to the low cost of the royalties (5 percent in the case of Chile,[82] 3 percent in Argentina[83]). The Pascua Lama project is only the beginning of a series of new mining initiatives born with the Mining Integration Treaty (Tratado sobre integración y complementación minera) between Argentina and Chile, signed in 1997, promoted by Barrick Gold Corporation.[84]

The commercial operations of Barrick Gold, as well as those of other big transnational corporations, are negotiated under civic-juridical systems of governments that appear to be democratic and representative, but in fact are manipulated by huge economic national and international interests. These economics interests are dictating a status quo that allows them to continue to increase their privileges, despite harm to the common good.[85] Opposition to the Pascua Lama project consists of a broad movement of farmers, aboriginal people, church members, district communities, young people, along with organizations dedicated to protecting and researching environmental, indigenous, and human rights. This movement has exhausted the few legal and judicial resources that the Chilean, Argentinean, and international systems offer.[86] The resistance movement to the Pascua Lama - Veladero project emerged after the first study on environmental impact evaluation in Chile in 2001, bringing to light the fact that Barrick failed to mention the existence of glaciers at the site of the proposed open pit mining project. The project has since been modified with Barrick planning to locate the open-pit mine near the glaciers Toro 1, Toro 2 and Esperanzat.[87]

The Pascua Lama-Veladero project was approved in 2006[89] by the Chilean and Argentinean governments and construction of the mine is expected to begin in September 2007.[90]

Despite the fact that the Pascua Lama-Veladero project was approved on June 16th, 2006 by CONAMA (the Chilean National Environment Commission), the movement to stop Pascua Lama is still finding ways to denounce the impacts of the project and to demand that it be stopped. Here are some of those activities:

- *Denunciation before the Inter-American Commission of Human Rights (January 2007);*
- *Denunciations before the Seventh Session of the Commission of Environmental Co-operation Chile-Canada (January 2007);*
- *Indictment of Barrick in the Popular Court at the II Social Forum in Chile (November 2006);*
- *Letter from the Diaguita Huasco Altina community's chief to the general manager of Barrick Gold Corporation (November 2006);*
- *Written and oral submissions to the National Roundtables on Corporate Social Responsibility, organized by the Government of Canada (October and November 2006);*
- *Letter from the community Diaguita Huascoaltina to the President of Chile, Michelle Bachelet (August 2006);*
- *Declaration of religious members in defense of the Huasco Valley (August 2006)*



TITLE PHOTO: CAMINO MINERO IS THE WIDEST STREET IN ALL OF THE PROVINCE OF SAN JUAN, PAID FOR BY PUBLIC FUNDS AND ONLY MINING TRUCKS CAN USE IT, AND THE OCCASIONAL WOOD GATHERER. IT LEADS TO PASCUA LAMA / VELADERO. PHOTO: DAVID MODERSBACH

BELOW: PHOTO OF RIO JACHAL. THE JACHAL RIVER, WHICH SUPPLIES ALL DRINKING WATER TO THE CITY AND FERTILE VALLEY OF JACHAL, SAN JUAN, DOUBLED IN ARSENIC LEVELS IN JUST ONE YEAR OF OPERATIONS OF BARRICK'S VELADERO MINE. PHOTO: DAVID MODERSBACH

ON-GOING LITIGATION AGAIN

UNITED STATES

Wilcox Complaint

On September 8, 2004, current or former residents of a rural area near the former Grants Uranium Mill filed a complaint against two Barrick subsidiaries: Homestake Mining Company of California and Homestake Mining Company. The 26 plaintiffs allege that they have suffered a "variety of physical, emotional, and financial injuries" as a result of exposure to radioactive and other hazardous substances. The complaint filed in the U.S. District Court for the District of New Mexico seeks an unspecified amount of damages.[91] One year later, results of groundwater sampling by the Grants Uranium Mine tested by the New Mexico Environment Department and U.S. Environmental Protection Agency show contaminants in 33 of 34 residential wells sampled, including elevated levels of uranium in 21 wells.[92]

Western Shoshone

Mt. Tenabo and Horse Canyon are extremely important spiritual and cultural sites for the Western Shoshone indigenous peoples in Nevada. Nonetheless, Cortez Gold Mine, of which Barrick Gold is a majority owner, is expanding mining expansion in this area. The Western Shoshone and supporter organizations have fought against mining for several decades, first opposing Oro Nevada, then Placer Dome, and now Barrick Gold. In 2005 after numerous cultural resource studies, shareholder actions, and administrative proceedings, the Te-Moak Tribe, the Western Shoshone Defense Project, and Great Basin Mine Watch filed a lawsuit against the U.S. Bureau of Land Management. Then majority owner, Placer Dome, filed a motion to intervene, claiming interest in the area and charging that the Western Shoshone did not have significant interest to proceed in the litigation. Barrick Gold has not retreated from the position of its predecessor and is now a party to the lawsuit.

On April 16, 2007, the United States federal court in Reno heard arguments in a case against the Bureau of Land Management's approval of Cortez Gold Mines' gold mining exploration proposal on and around Mt. Tenabo and Horse Canyon, in a room filled with tribe supporters. The defendants are the BLM and Cortez Gold Mines, Inc.

The plaintiffs' case rests on three main issues: 1) BLM violated the National Historic Preservation Act when it failed to adequately consult with the Western Shoshone on the mining exploration project. BLM also failed to adequately protect Western Shoshone cultural and religious uses of and resources in these areas; 2) BLM violated the National Environmental Policy Act (NEPA) when it failed to review the impacts of the massive Pediment/Cortez Hills mine project that Cortez Gold Mines has proposed in the same area; and 3) BLM violated the Federal Land Policy and Management Act (and also NEPA) when it approved the mining exploration without knowing the actual location of roads, drill sites, etc.; it also failed to adequately protect Western Shoshone heritage resources.[93]

SOUTH AMERICA

Chilean Rodolfo Villar sues over Pascua Lama properties

When Rodolfo Villar sold 20,000 acres to Barrick Gold for its Pascua Lama gold mining project, the mineral speculator signed a contract that he thought would pay him $1 million. Instead, the contract gave him only $19, and a fine-print stipulation that if he tried to obtain rights to any other lands in the surrounding area, he would face a $95,000 fine.[94]

Aided by legal team of 30, including some of Chile's most prominent lawyers, Villar sued Barrick and won. Rather than getting the million dollars, he got his land back and is now asking $300 million for it. "Literally, we are sitting on a gold mine," remarked one of his lawyers to the *Washington Post*. Barrick is appealing the case.[95]

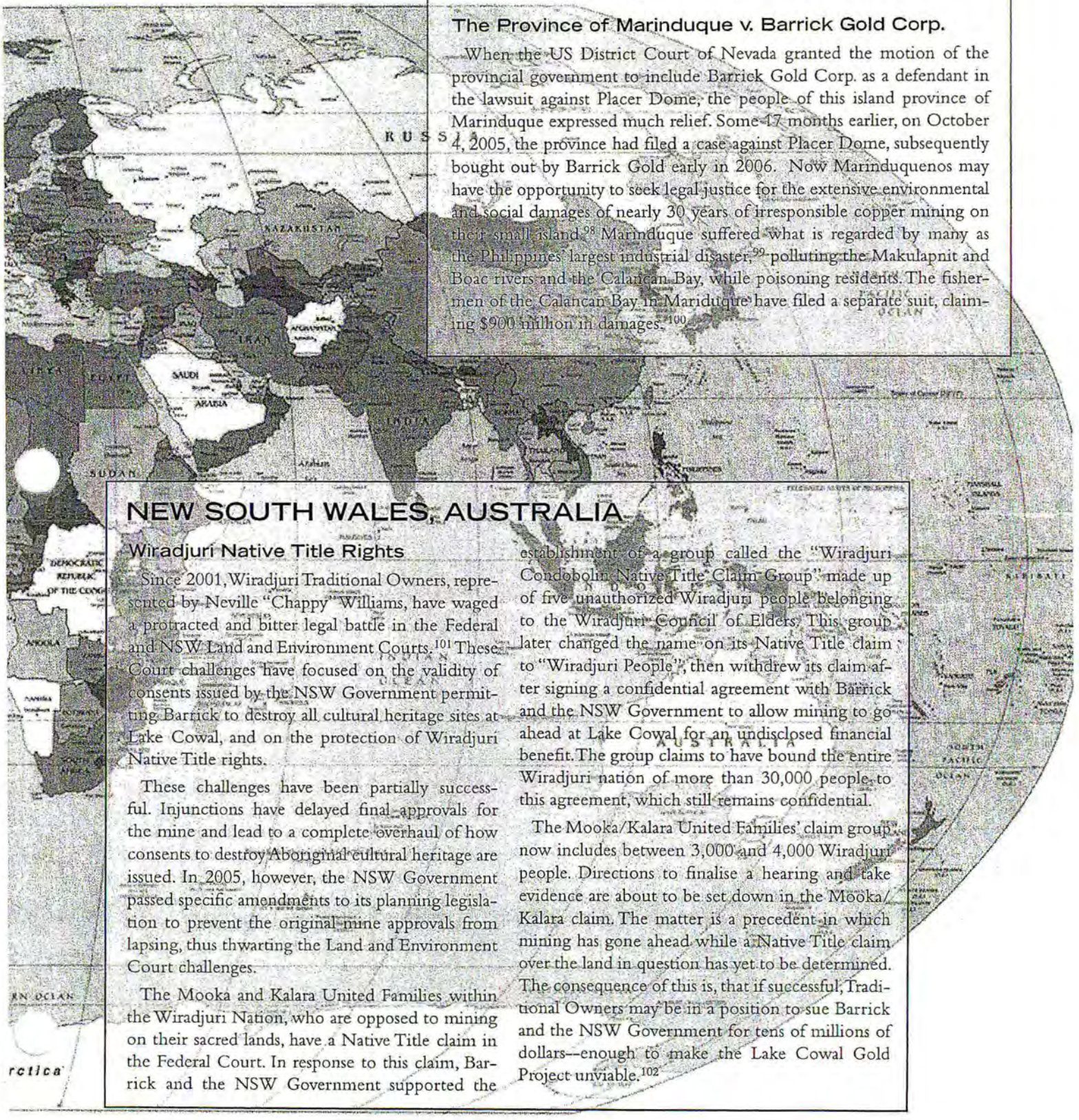
Villaverde family of Argentina is perusing similar litigation: The family has land claims to an area of a proposed mine, but refuses to sell cheap.[96]

Chilean traditional owners, the Huascoaltinos, sue over land claims

An ancestral indigenous group from northern Chile is accusing Barrick of illegally acquiring land near the mining company's proposed Pascua Lama project. The Diaguita indigenous communities say that historical documents prove that the disputed land is part of their ancestral territory. They filed a lawsuit against the company in 2001, charging that the single group member who signed the contract was not legally entitled to make the deal.

Additionally, on July 25, 2005, the Chilean Consumers' Organization filed a complaint with the Organization of American States (OAS). It alleges that the Pascua Lama project poses a grave risk to the subsistence rights of the Diaguita indigenous communities in the area, and that the Chilean government would be breaking its international commitments if it approves the project. Specifically, the United Nations' International Covenant on Economic, Social and Cultural Rights (ICESCR) and the International Covenant on Civil and Political Rights commit the Chilean government to giving "special protection" to Diaguitas water rights.[97]

JST BARRICK



PHILIPPINES

The Province of Marinduque v. Barrick Gold Corp.

When the US District Court of Nevada granted the motion of the provincial government to include Barrick Gold Corp. as a defendant in the lawsuit against Placer Dome, the people of this island province of Marinduque expressed much relief. Some 17 months earlier, on October 4, 2005, the province had filed a case against Placer Dome, subsequently bought out by Barrick Gold early in 2006. Now Marinduquenos may have the opportunity to seek legal justice for the extensive environmental and social damages of nearly 30 years of irresponsible copper mining on their small island.[98] Marinduque suffered what is regarded by many as the Philippines' largest industrial disaster,[99] polluting the Makulapnit and Boac rivers and the Calancan Bay, while poisoning residents. The fishermen of the Calancan Bay in Mariduque have filed a separate suit, claiming $900 million in damages.[100]

NEW SOUTH WALES, AUSTRALIA

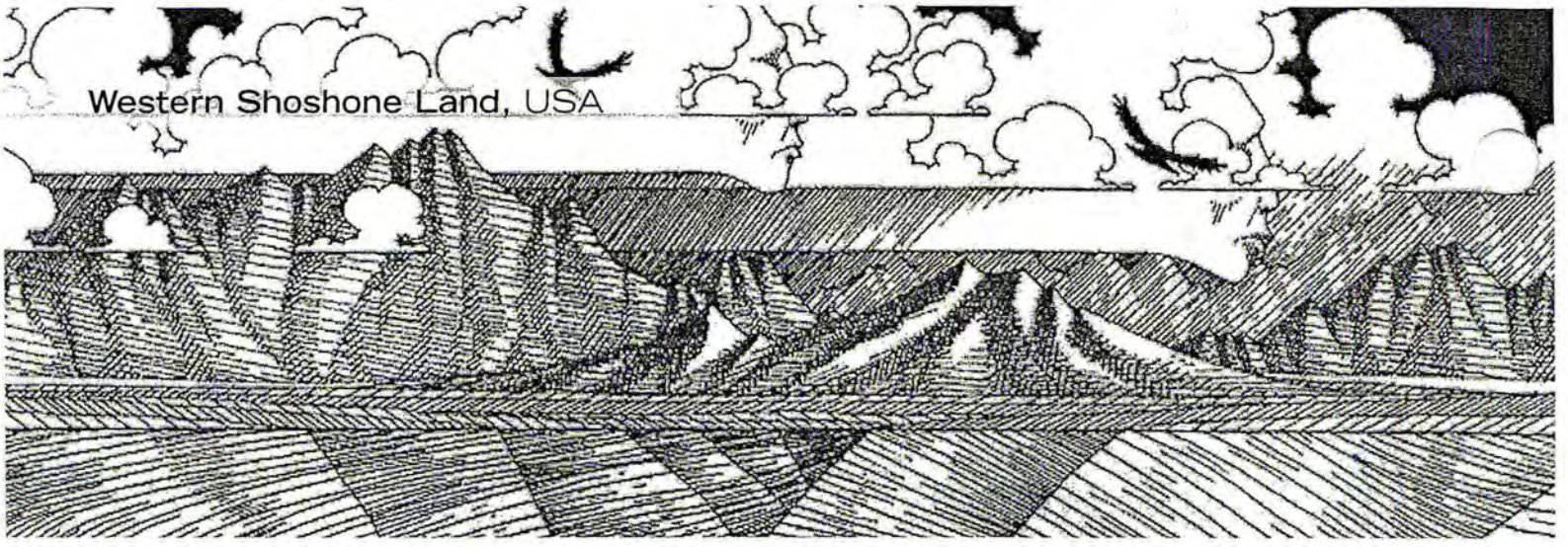
Wiradjuri Native Title Rights

Since 2001, Wiradjuri Traditional Owners, represented by Neville "Chappy" Williams, have waged a protracted and bitter legal battle in the Federal and NSW Land and Environment Courts.[101] These Court challenges have focused on the validity of consents issued by the NSW Government permitting Barrick to destroy all cultural heritage sites at Lake Cowal, and on the protection of Wiradjuri Native Title rights.

These challenges have been partially successful. Injunctions have delayed final approvals for the mine and lead to a complete overhaul of how consents to destroy Aboriginal cultural heritage are issued. In 2005, however, the NSW Government passed specific amendments to its planning legislation to prevent the original mine approvals from lapsing, thus thwarting the Land and Environment Court challenges.

The Mooka and Kalara United Families within the Wiradjuri Nation, who are opposed to mining on their sacred lands, have a Native Title claim in the Federal Court. In response to this claim, Barrick and the NSW Government supported the establishment of a group called the "Wiradjuri Condobolin Native Title Claim Group" made up of five unauthorized Wiradjuri people belonging to the Wiradjuri Council of Elders. This group later changed the name on its Native Title claim to "Wiradjuri People", then withdrew its claim after signing a confidential agreement with Barrick and the NSW Government to allow mining to go ahead at Lake Cowal for an undisclosed financial benefit. The group claims to have bound the entire Wiradjuri nation of more than 30,000 people to this agreement, which still remains confidential.

The Mooka/Kalara United Families' claim group now includes between 3,000 and 4,000 Wiradjuri people. Directions to finalise a hearing and take evidence are about to be set down in the Mooka/Kalara claim. The matter is a precedent in which mining has gone ahead while a Native Title claim over the land in question has yet to be determined. The consequence of this is, that if successful, Traditional Owners may be in a position to sue Barrick and the NSW Government for tens of millions of dollars--enough to make the Lake Cowal Gold Project unviable.[102]



CASE STUDY:

MINING ON SPIRITUAL GROUNDS

The Western Shoshone peoples in the United States are engaged in one of the world's best-known and longest indigenous land rights struggles. For several decades, the Shoshone people have voiced serious concerns that environmental damage resulting from the cumulative effects of the mining activities will severely affect, if not outright destroy, Western Shoshone land, resources, and customs.

Creation stories teach that the Newe, the people, are responsible for the earth, which is a female living being. Carrie Dann, Western Shoshone grandmother said:

We were taught that we were placed here as caretakers of the lands, the animals, all the living things – those things that cannot speak for themselves in this human language. We, the two-legged ones, were placed here with that responsibility. We see the four most sacred things as the land, the air, the water and the sun (l.a.w.s.). Without any one of these things there would be no life. This is our religion – our spirituality – and defines who we are as a people.

In the 1863 Treaty of Peace and Friendship (Treaty of Ruby Valley) with the United States, the Western Shoshone granted the United States access across their lands and permission to undertake certain activities.[103] In exchange, the United States recognized Western Shoshone land boundaries and agreed to pay compensation.[104]

The original conditions of the treaty still hold and the Western Shoshone continue to occupy and use their ancestral lands. Now, however, Washington is undermining those traditional and legal rights and claiming approximatey 90 percent of the land base as federal or "public" lands. It is relying on stipulated agency findings of "gradual encroachment" – a procedure that the Inter-American Commission on Human Rights[105] called an "illegitimate" means of claiming title.

In 2002, the Inter-American Commission issued a final report finding the United States in violation of Western Shoshone rights to equality before the law, due process, and property.[106] Rather than abide by this decision, the U.S. conducted an armed seizure of over 400 Shoshone horses. The United States has been in defiance of not only the findings and recommendations of the Inter-American Commission, but also the recommendations and Final Decision of the United Nations Committee on the Elimination of Racial Discriminatinon (CERD).[107] CERD noted particular concern regarding:

a) ... legislative efforts to privatize Western Shoshone ancestral lands for transfer to multinational extractive industries and energy developers.

b) Information according to which destructive activities are conducted and/or planned on areas of spiritual and cultural significance to the Western Shoshone peoples, who are denied access to, and use of, such areas. It notes in particular ... the alleged use of explosives and open pit gold mining activities on Mount Tenabo and Horse Canyon.

c) The conduct and/or planning of all such activities without consultation with and despite protests of the Western Shoshone peoples..."[108]

CERD further ordered the U.S. to "freeze" and "desist" from all activities planned or conducted on the ancestral lands of Western Shoshone, particularly in relation to their natural resources.[109] Barrick Gold was immediately notified of this decision.

The Western Shoshone have brought the issue to international attention as partners in the No Dirty Gold Campaign, a global campaign to educate consumer about the effects of mining. The campaign has developed strong networks among indigenous communities fighting companies including Barrick.

Barrick is the primary actor in the Mount Tenabo and Horse Canyon areas. The Toronto-based company is the majority owner of Cortez Gold Mine, the entity submitting exploration and mining expansion proposals. The mining activities by Cortez Gold Mine are being pushed forward without the free, prior and informed consent of the Western Shoshone nor adequate consideration of the resulting spiritual, cultural and environmental harms. Because of the increased activity in this area, on May

9, 2005, the Western Shoshone Defense Project, the Te-Moak Tribe of Western Shoshone, and Great Basin Mine Watch filed a lawsuit against the U.S. Bureau of Land Management (BLM) challenging the approval of mining activities on Mount Tenabo and Horse Canyon.[110] *(see on-going litigation: page 12-13)*

Operations around Mount Tenabo and Horse Canyon are threatening burial and other historical and spiritual sites as well as despoiling land used for gathering medicinal and food plants, and for hunting. The United States recently recognized some of these sites for listing on the U.S. National Register of Historic Places as Properties of Cultural and Religious Importance.

Since the filing of the lawsuit, the U.S. Department of Interior, BLM, has announced plans by Cortez Gold Mines to further expand its open–pit gold mining and processing operation in the Cortez Hills Expansion Project.[111] According to the state's public notice, the "disturbance area" associated with this project is 15,242 acres of Western Shoshone traditional land.[112] The expansion would entail the destruction of 5,000 acres of Pinyon Forest, a staple Western Shoshone food source; a new open-pit cyanide heap leach mine on the Southern flank of the mountain; new heap leach pads; and increased dewatering and underground detonations. Barrick has also proposed an expansion through its Underground Project that digs into the east flank of Tenabo wrapping around to the southwest portion of the mountain.

The rate at which the Betze mine is dewatering the area – upwards of 70,000 gallons per minute – could deplete the water source and affect springs used for healing and prayer rituals.

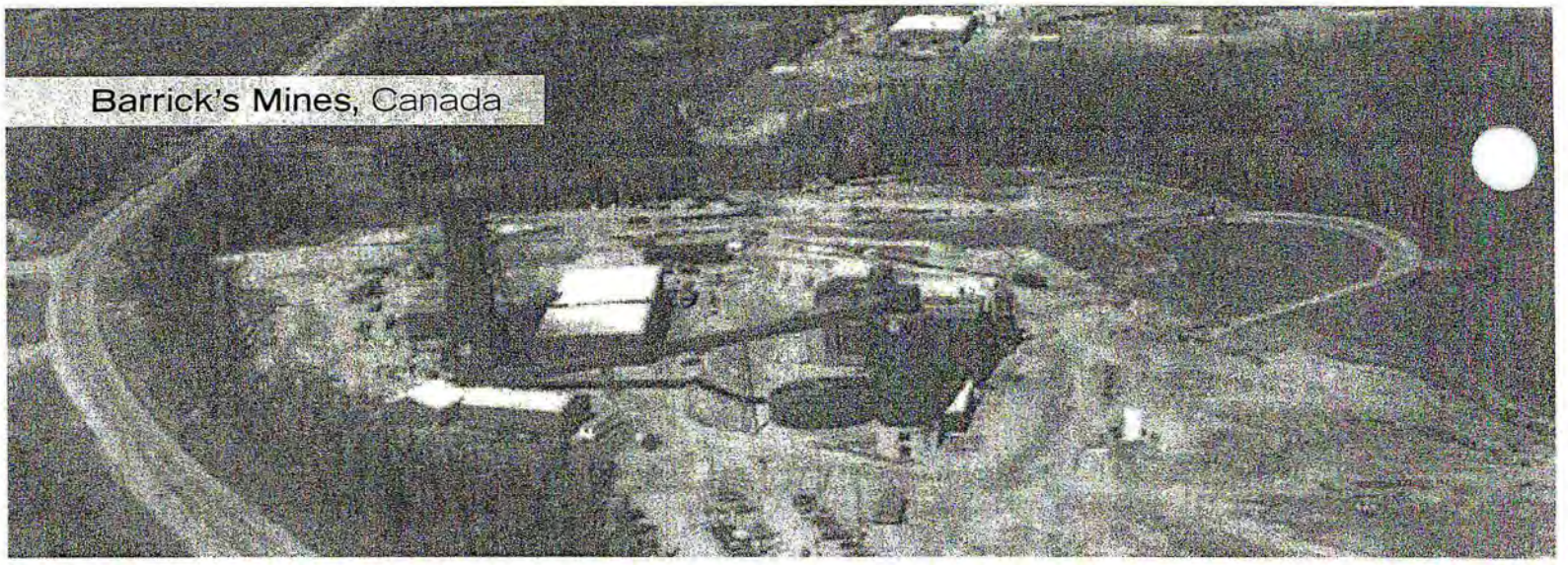
In addition to the immediate threat to the Mount Tenabo and Horse Canyon area from the Cortez mine, Barrick Gold operations are also threatening the current spiritual and ceremonial area of Rock Creek. The rate at which the Betze mine is dewatering the area – upwards of 70,000 gallons per minute–[113] could deplete the water source and affect springs used for healing and prayer rituals.

The damage is not confined to Mount Tenabo/Horse Canyon and Rock Creek. Mining activities on Western Shoshone land present a devastating picture of massive dewatering and dangerously high levels of mercury and other toxins.[114] In clear violation of CERD's recommendation to desist from such activities, Barrick's joint venture Round Mountain Gold Corporation recently announced plans to expand its existing boundary by 3,122 acres and double production capacity from 11,000 to 22,000 tons per day.[115] Barrick's Bald Mountain operation announced expansion plans of over 3,500 acres in an area used and occupied by Western Shoshone extended family at the Odger's Ranch.

The mining expansions will mean that Western Shoshone peoples, who already live in the state with the country's highest levels of mercury pollution, will be further exposed to toxins.[116] The Environmental Protection Agency reports that northern Nevada gold mines release more than 4,600 pounds of mercury into the air each year. A recent independent study found mercury concentrations in fish collected from Wild Horse Reservoir at levels the U.S. Environmental Protection Agency considers a public health risk.[117] A finding of half that level of contamination spurred Idaho to issue a fish consumption advisory warning pregnant women and children under 12 not to eating fish from the reservoir.[118]

In response to concerns raised at Placer Dome's 2005 annual general meeting, the company initiated quarterly "dialogues" with the Western Shoshone to reportedly to address cultural and environmental concerns and human rights issues around the Mount Tenabo area and other areas. However, the dialogue sessions facilitated by a Barrick contractor have not allowed for these discussions to take place. Instead, the dialogues have been used by Barrick to solicit small "community benefits" to individual Shoshone communities and to claim that the participation of Shoshone somehow equates to consent for ongoing operations. Concerns have been repeatedly raised to Barrick and in their most recent response, President Greg Lang openly employed a divide and conquer tactic by claiming that the use of litigation to protect the Mount Tenabo area was expending funds that the Company could otherwise be using to "benefit" Western Shoshone. By this manipulation of the "dialogue" process, Barrick is in fact creating further divisions between Shoshone individuals and communities, exacerbating an already bad situation.

TITLE PHOTO: ART BY SHOSHONE ARTIST JACK MALLOT
BELOW: MT TENABO, TAKEN BY WESTERN SHOSHONE DEFENSE PROJECT



BARRICK'S LEGACY:

MAKING A MESS, LEAVING THE BILL

Despite the fact that Barrick is a Canadian company, it only has two operating projects in Canada: Eskay Creek in northern British Columbia, and the Hemlo Joint Venture on the north shore of Lake Superior in Ontario. It also has a number of closed mines in Canada, such as Renabie, and Golden Patricia.

The environmental impact of these mines is difficult to assess because the laws vary from province to province and regulation is lax. Regulators often depend on self-reporting and self-monitoring by the mining companies themselves, so there is little publicly available information at either the provincial or federal level.

Renabie Mine (1947-1991)

The Renabie Mine is on land that straddles the Arctic and Superior watersheds. It is on the traditional territory of the Missanabie Cree First Nation, who are still fighting for legal recognition of their indigenous land rights.

Renabie was the first gold mine to open after the Second World War (gold mines were required to close during the war because miners were diverted to excavate metals that were more important for war-related production). The mine operated until 1991. Once the ore was depleted, the mine shut down. The present population that lives at the site of the former mine totals about 40.[119]

Even today the surface water flowing from the property contains elevated levels of zinc, cobalt, iron and copper. In 1995, company reports declared that reclamation work had been completed, except for some re-vegetation of the tailings areas. But in 1998 sink holes began to appear on the site, and in 1999 part of the underground mine collapsed, creating a gaping hole through to the underground workings.[120]

Even today the surface water flowing from the property contains elevated levels of zinc, cobalt, iron and copper. In 1995, [Barrick's] reports declared that reclamation work had been completed, except for some re-vegetation of the tailings areas. But in 1998 sink holes began to appear on the site, and in 1999 part of the underground mine collapsed, creating a gaping hole through to the underground workings.

Barrick has been trying to get the provincial government to assume responsibility for the mine following the closure and has applied for an "exit ticket" in return for a fee of $102,290. (The system of "exit tickets" which allow companies to walk away from future liability after paying a fee, was created in Ontario after extensive lobbying by the mining industry in the mid-1990s.)[121]

Golden Patricia Mine (1988-1997)

The Golden Patricia Mine in northern Ontario opened in 1988. The mine was on the traditional territory of a number of First Nations indigenous peoples which were organized into the Windigo First Nations Tribal Council. The council signed an agreement in 1988 with the mining company for environmental protection, jobs and other benefits and renewed it three years later.

Barrick bought the mine from Lac Minerals in 1995. Two years later, the ore at Golden Patri-

cia was completely depleted. The Windigo First Nations then discovered that neither Lac Minerals nor Barrick had fulfilled the agreement that they had signed. [122]

A study by Alan Grant, a law professor at York University, in 1997, paints a dismal picture. There was a clause in the agreement that stated that the parties will "leave the land in as good a condition as regards traditional harvesting pursuits upon completion of the Project as it was before the Project began." Yet the tailings area and waste rock piles are now expected to be toxic in perpetuity. The agreement provided for training and employment, but minimal training was provided. There were no opportunities the indigenous peoples to provide contracted services to the mine and few Windigo members worked at the mine. The council failed to come to any agreement with Barrick about compensation at closure.[123]

Hemlo Gold Camp (1985-

The Hemlo Gold Camp is located on the north shore of Lake Superior near Manitouwadge. In 2001, when Barrick Gold bought Homestake mining company, it acquired a joint venture with Teck-Cominco for two mines – David Bell and Williams – in the Hemlo Gold Camp, The third mine – Golden Giant – is owned by Newmont.

Workers at the mines have reported numerous cases of lung ailments at these mines, including some cases of silicosis and sarcoidosis. The company has fought worker compensation claims for these ailments ferociously.[124]

The First Nations indigenous community that lives downstream from the mine are the Pic River peoples. In 2000, the community reported having to replace their water treatment plant in order to remove cyanide from their drinking water.[125]

The closure plans for the mines do not include appropriate disposal or treatment of massive piles of acid generating/leachate toxic waste rock, nor do they evaluate the risk of groundwater contamination to the area through seeps from the tailings areas and underground workings.

According to Northwatch, an NGO in northern Ontario, who reviewed the company closure plans, at the Hemlo mines, estimated closure costs and associated financial securities posted by the mining companies, are much lower than real costs are likely to be, as the closure plans for the mines do not include appropriate disposal or treatment of massive piles of acid generating/leachate toxic waste rock, nor do they evaluate the risk of groundwater contamination to the area through seeps from the tailings areas and underground workings.[126]

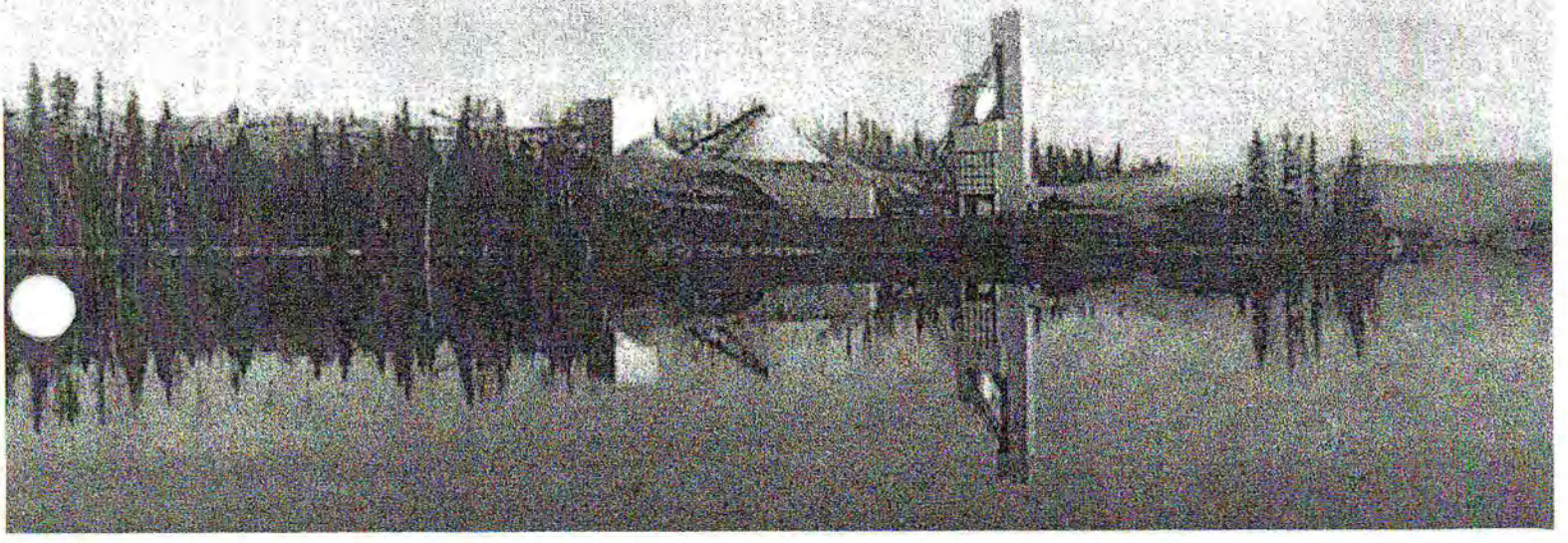
The Eskay Creek Mine (1995-2008)

The Eskay Creek Mine is in the headwaters of the Unuk River in British Columbia the traditional territory of the Tahltan First Nation. Barrick purchased the mine in 2001 from Homestake. It opened in 1995 and will have depleted mineable ore by 2008.

This mine has turned two lakes into tailings impoundments and waste rock dumps: Tom MacKay and Albino Lakes. (This is legal in Canada but severely restricted in other countries like the U.S.)

MiningWatch Canada has expressed increasing concerns about the long term monitoring of the lakes that have been turned into tailings impoundment areas, as there are very high concentrations of antimony, arsenic and mercury contained in the ore.[127] Unfortunately there is no publicly available data on this as there are no right to know laws in Canada that govern the disposal of toxics to waste rock piles and tailings impoundments. All monitoring on effluents is done by the company itself. Since Barrick's take-over of the mine, the company has rarely reported exceeding government water quality standards.[128]

TITLE PHOTO: AEREAL PHOTO OF THE THREE MINES IN THE HEMLO CAMP: DAVID BELL (FRONT), HEMLO GOLD AND WILLIAMS (REAR). PHOTO: TECK CORP MINE
BELOW: HEADFRAME AND STOCKPILE DOME WITH REFLECTION IN LAKE. WILLIAMS MINE, HEMLO GOLD FIELD. PHOTO: TECH CORP MINE



PLACER'S LEGACY:

BARRICK FIGHTS RESPONSIBILITY AND LETS MARINDUQUENOS SUFFER

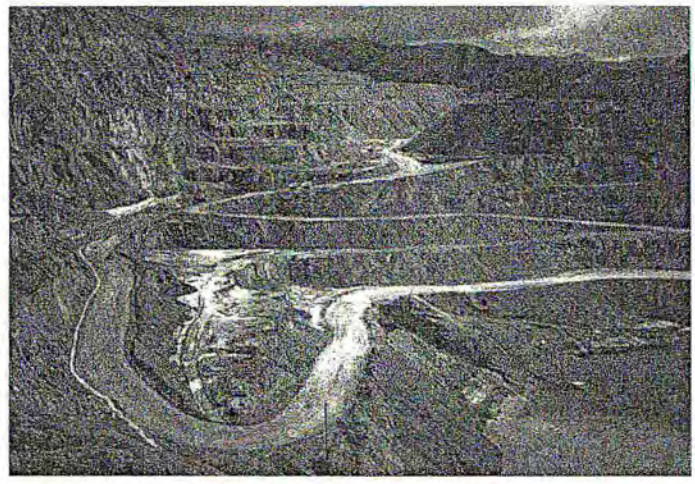
In the Spring of 2006, when Barrick Gold took over Placer Dome, Inc. it inherited a law suit initiated by provincial authorities on the Philippine island of Marinduque.[129] The suit, filed on October 4, 2005 in a Nevada court, charged that 27 years of irresponsible mining by Placer Dome (1969-1996) had caused immense damage to the island of Marinduque and its people. Placer Dome was 39.9 percent owner of the Marcopper Mining Corporation and managed the two Marcopper copper mines that destroyed one bay and two major river systems on the island of Marinduque.[130] Rather than settle the case, compensating Marinduquenos for lost livelihood and funding efforts to rehabilitate the damaged eco-systems, Barrick is waging an expensive and lengthy legal battle to avoid responsibility.

The now abandoned Marcopper mines and waste dumps sit in the Province of Marinduque, a small heart-shaped island near the middle of the Philippine archipelago, where they continue to contaminate the soil, air and water of the island. Most of the island's 200,000 citizens are fishers and farmers, and many rely for their daily food on what they can harvest from their rivers, sea, and land.

Nearly three decades of Placer Dome's management of the Marcopper mines created one mining-related environmental disaster after another.[131]

Calancan Bay – Since 1975 the food security and health of 12 fishing villages around the bay has been severely affected by mining activities. For 16 years, from 1975 to 1991, Placer Dome oversaw the surface disposal of more than 200 million tons of mine tailings directly into the shallow waters of Calancan Bay. The dumping covered corals, seagrasses and the bottom of the bay with 80 square kilometers of tailings. A large portion of the waste – exposed in a tailings causeway in the bay and by low tides – regularly blows into nearby villages. The tailings also leach metals into the bay and are suspected of causing lead poisoning in local children. In 1998, the Philippine Government declared a state of calamity for health reasons for Calancan Bay villages because of lead contamination.

Mogpog River - In 1991, Marcopper built an earthen dam in the mountainous headwaters of the Mogpog River to keep silt from a waste dump for the new San Antonio mine, from flowing into the river. The townspeople of Mogpog had vigorously opposed the dam project, fearing impacts on the river they use for food, for water for themselves and their animals, and for washing. In 1993, when the dam burst, flooding destroyed houses, water buffalo and other livestock, and crops. Two children were swept to their deaths. Marcopper's resident manager, Placer Dome's Steve Reid, denied responsibility, blaming unusually heavy rainfall from a typhoon.[132] The Mogpog River remains heavily contaminated with acid and metals from mine waste that continues to seep through the faulty dam.

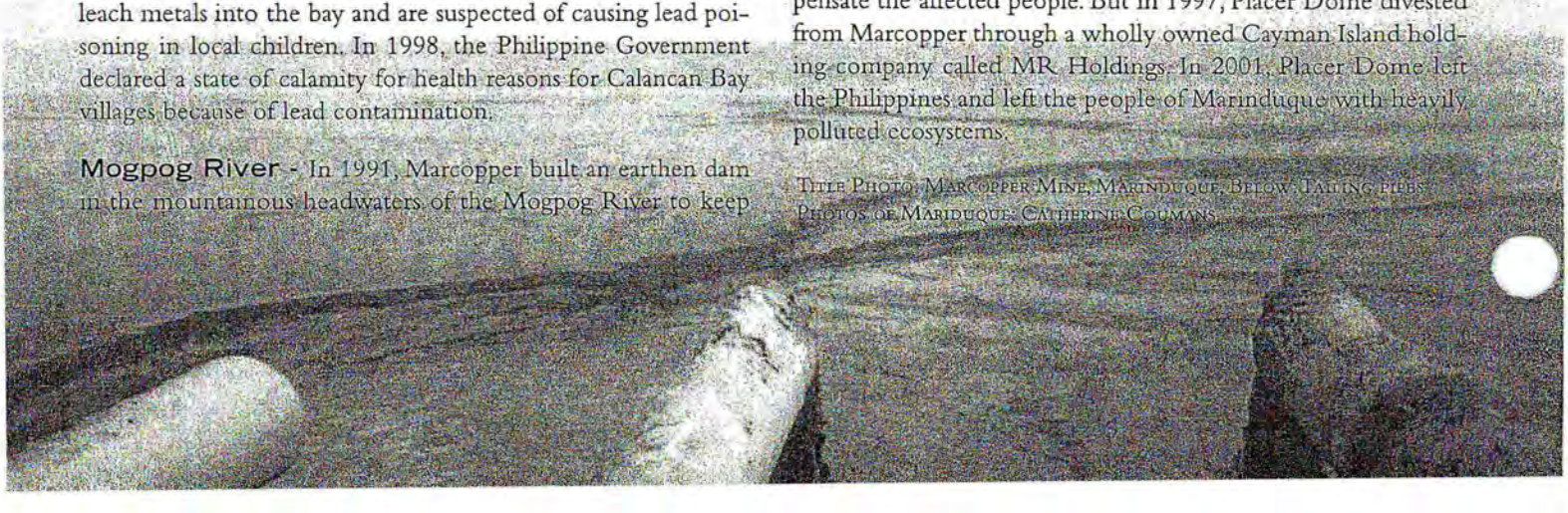


The Boac River Tailings Spill Disaster of 1996

On March 24, 1996, another massive tailings spill at the Marcopper Mine filled the 26-kilometer-long Boac River on Marinduque with 3-4 million tons of metal-enriched and acid-generating tailings. The spill happened when a badly sealed drainage tunnel at the base of the Tapian Pit burst. The mined-out pit, high in the central mountains of the island, had been used since 1992 as to store tailings from the adjacent San Antonio mine. An investigative team from the United Nations visited the island shortly after the tailings spill and noted: "it is evident that environmental management was not a high priority for Marcopper."[133]

Placer Cuts and Runs

Following the Boac River disaster, Placer Dome promised to plug the tunnel, clean up the river and the seashore, and compensate the affected people. But in 1997, Placer Dome divested from Marcopper through a wholly owned Cayman Island holding company called MR Holdings. In 2001, Placer Dome left the Philippines and left the people of Marinduque with heavily polluted ecosystems.



Title Photo: Marcopper Mine, Marinduque. Below: Tailing pipes. Photos of Mariduque: Catherine Coumans.

COMMUNITY VICTORY:

FAMATINA SAYS **NO** TO BARRICK GOLD

This year, in the Argentine province of La Rioja, a small group of dedicated neighbors took on Barrick Gold, forcing it to suspend operations on the Famatina range. Their efforts led as well to the ouster of a corrupt pro-mining provincial governor closely tied to Barrick Gold. The activists were fighting to save their mountain range from open-pit mining exploitation.

In early 2006, Barrick Gold had announced a new gold mining project high on Mt. Famatina in the province of La Rioja. The provincial governor, Ángel Maza, was the mining firm's key ally and a supporter of the neoliberal reforms of the 1990s. He and other officials worked alongside former President Carlos Menem, mining companies, and international finance organizations to privately rewrite the country's mining codes, thereby handing transnational mining companies incentives, tax breaks, legal protection, and environmental impunity for their extractive projects.[136]

While he was supporting these policies, Maza became co-owner of the YAMIRI, a mineral exploration and development company, and the mining concessions on Mt. Famatina. He would later pass that property, which had been state-owned, to Barrick Gold.[137]

When Barrick SUVs began to ply the dusty roads of La Rioja, community members grew nervous. A group of four women met in the town of Famatina in March 2006 and formed the "Self-Organized (Autoconvocados) Neighbors of Famatina for Life." They opted for "horizontal" grassroots organizing with shared decision-making, a structure that had been used effectively in many community struggles in Argentina. Soon a series of smaller, inclusive groups sprang up in towns and villages around Mt. Famatina. Autoconvocados from Famatina, Chilecito, Pihuil, Chañarmuyo, Los Sauces and others villages joined forces, putting politics aside and concentrating on the important issues at hand: learning about and spreading the word on the environmental, social, cultural and economic consequences of open-pit mining.[138]

Word was passed through community meetings, local newspapers, flyers, tabling, and town hall meetings. Residents gathered with agricultural producers, tourism guides, teachers, and local political officials to talk about mining threats to the delicate glacier systems. They discussed sustainable development and promoting the health of Famatina. These producers, teachers, and workers met in turn with their organizations and took their message to the capital of La Rioja: "If the mines are built, we cannot produce, and what little we do produce will be contaminated and we will not be able to sell it."

Destruction of Evidence

When the La Rioja legislature formally suspended Governor Maza for corruption and called for a prohibition on open-pit mining, ex-Gov. Maza hunkered down in his office in the capitol building, refusing to leave. While mining industry spokespersons spoke out to defend him and Barrick Gold, Maza and his party hired thugs and security guards to pose as Maza supporters and demonstrate and riot in the streets.

When provincial police dispersed the "supporters" with tear gas and escorted the ex-governor out, it became clear what happened during the night: the Maza administration had carried out a systematic destruction of all paperwork, burning the Maza machine's computers and files along with all documents linking him to Barrick Gold and other improprieties. Maza also caused bureaucratic mayhem by maliciously burning paperwork for many health and school public employees.[140]

ASSEMBLY OF MOTHERS AGAINST MINING IN JÁCHAL, SAN JUAN ARE FIGHTING FOR CLEAN WATER FOR THEIR CHILDREN AND EXPOSING THE CORRUPT POLITICIANS RESPONSIBLE FOR MINING CONTAMINATION. PHOTO: DAVID MODERSBACH

Legislation to Ban Open-Pit Mining

It was not long before allegations of corruption surfaced. Vice Governor Beder Herrera, in abrupt change of heart, introduced a bill in the provincial legislature to prohibit open-pit metals mining in the province. Approved by the legislature, it called for a binding public referendum on the question of open-pit mining to be held on July 29, 2007.

The autoconvocados, emboldened but mistrustful of the entire political process, decided to blockade the mining road at Peñas Negras, some 9,300 feet up Famatina, forcing Barrick to suspend activities on March 14, 2007. The blockade continues to this date (4/24/07), and according to activists, will continue until Barrick Gold and the threat of open-pit mining are gone from La Rioja.

The Fall of Governor Maza

Governor Maza said he would veto the bill, but he never got his chance. On the weekend of the blockade, the legislature passed an extraordinary measure to suspend Maza and bring him to trial for corruption.[141]

United Nations

ACCOUNTABILITY:

UN to Canada:
HOLD YOUR CORPORATIONS ACCOUNTABLE FOR HUMAN RIGHTS ABUSES

In March 2007, the United Nations Committee on the Elimination of Racial Discrimination (CERD) issued a formal recommendation to Canada. It called on Canada to better regulate and monitor its mining corporations abroad when they are operating on indigenous lands and to complete a report within the next 12 months on corporate activities. This ground-breaking recommendation marks the first time a United Nations Treaty Body has formally urged government accountability for corporate behavior outside Canadian boundaries.

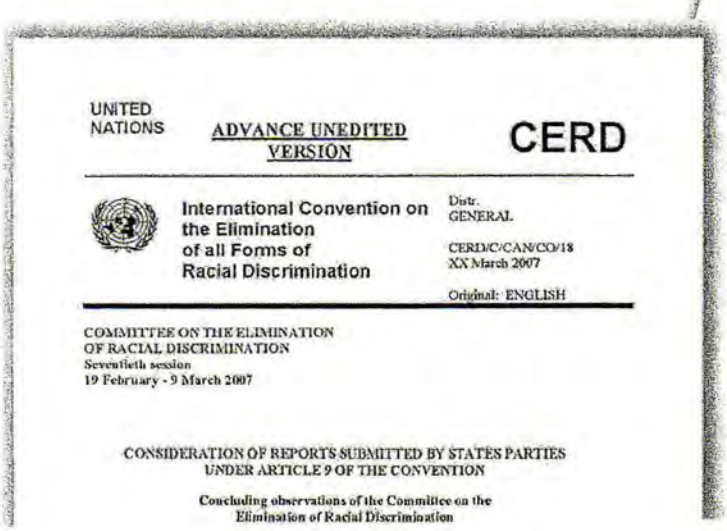
In its recommendation, the committee based its concerns on "reports of adverse effects of economic activities connected with the exploitation of natural resources in countries outside Canada by transnational corporations registered in Canada on the right to land, health, living environment, and the way of life of indigenous peoples living in these regions …:

…the Committee encourages the State party to take appropriate legislative or administrative measures to prevent acts of transnational corporations registered in Canada which negatively impact on the enjoyment of rights of indigenous peoples in territories outside Canada. In particular, the Committee recommends to [Canada] that it explore ways to hold transnational corporations registered in Canada accountable. The Committee requests [Canada] to include in its next periodic report information on the effects of activities of transnational corporations registered in Canada on indigenous peoples abroad and on any measures taken in this regard. (Para. 17, Concluding Observations on Canada)

The CERD recommendation followed on the heels of reports by several indigenous organizations and communities on the behavior of Canadian mining companies, in particular, Barrick Gold. The reports emphasized that this was not the first time Canada had undergone scrutiny for the behavior of its corporations. In its 14th Report, adopted on June 26, 2005, Canada's Standing Committee on Foreign Affairs and International Trade had condemned Canada's mining corporations acting abroad.[142]

The Standing Committee issued a number of recommendations to Canada to reign in its corporate behavior abroad. To date, neither Canada nor companies including Barrick have implemented these recommendations.

In 2003, before the Standing Committee review and recommendations, the UN Special Rapporteur on Toxic Waste and Products had made special note of Canadian corporate behavior and lack of accountability. The report also noted that illicit movement and dumping of toxic and dangerous products and wastes by Canadian corporations had adversely impacted human rights.[143] The rapporteur recommended "that particular attention is paid to allegations relating to threats to the traditional lifestyles and rights of indigenous groups"[144] and called on "the Canadian and other Governments to explore ways of establishing extraterritorial jurisdiction over human rights violations, committed by companies operating abroad.[145]"



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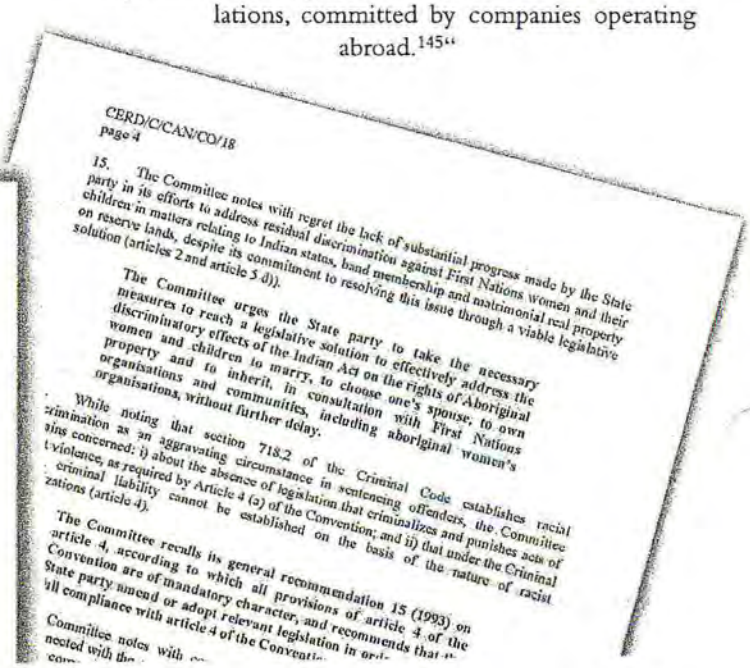
Seventieth session
19 February - 9 March 2007

CONSIDERATION OF REPORTS SUBMITTED BY STATES PARTIES UNDER ARTICLE 9 OF THE CONVENTION

Concluding observations of the Committee on the Elimination of Racial Discrimination



CERD/C/CAN/CO/18
page 4

15. The Committee notes with regret the lack of substantial progress made by the State party in its efforts to address residual discrimination against First Nations women and their children in matters relating to Indian status, band membership and matrimonial real property on reserve lands, despite its commitment to resolving this issue through a viable legislative solution (articles 2 and article 5 d)).

The Committee urges the State party to take the necessary measures to reach a legislative solution to effectively address the discriminatory effects of the Indian Act on the rights of Aboriginal women and children to marry, to choose one's spouse, to own property and to inherit, in consultation with First Nations organisations and communities, including aboriginal women's organisations, without further delay.

While noting that section 718.2 of the Criminal Code establishes racial crimination as an aggravating circumstance in sentencing offenders, the Committee tains concerned: i) about the absence of legislation that criminalizes and punishes acts of violence, as required by Article 4 (a) of the Convention; and ii) that under the Criminal criminal liability cannot be established on the basis of the nature of racist zations (article 4).

The Committee recalls its general recommendation 15 (1993) on article 4, according to which all provisions of article 4 of the Convention are of mandatory character, and recommends that t State party amend or adopt relevant legislation in ord full compliance with article 4 of the Conventi

Committee notes with c nected with the

RESPONSIBLE INVESTMENT:

HOW **ETHICAL** ARE ETHICAL SCREENERS AND "ETHICAL FUNDS"?

The socially responsible, or "ethical," investment industry is growing by leaps and bounds. In the US this market was estimated at 2.37 trillion Canadian dollars in December 2005. In Canada it is worth approximately 500 billion Canadian dollars.

Investors who are looking for a responsible way to invest their money rely on specialized research firms to screen companies on their social and environmental performance. This research is then used by ethical fund companies who market shares to their investors.

Soon after Barrick Gold took over Placer Dome, Jantzi Research reviewed the company and found it "ineligible" as an ethical investment (June 6, 2006).[146] The reasons for this decision were very good indeed. Jantzi's noted, among other things: massive outstanding environmental, economic and human health impact legacies at the disastrous Marcopper Mine in the Philippines, which Jantzi's said Barrick Gold should address rather than fight legally; a history of lack of consultation with the Western Shoshone in the U.S., which Jantzi's said Barrick should address by engaging with the Western Shoshone and addressing their concerns; environmental concerns including Riverine Tailings Disposal at the Porgera Mine in Papua New Guinea, which Jantzi's said Barrick should commit to not doing at future mines without the strong support of local communities; human rights concerns related to the killings of at least eight civilians by security guards at the Porgera Mine, which Jantzi's said Barrick should avoid through management systems and programs and reporting on its performance; the local opposition to Barrick's proposed Pascua Lama mine in a sensitive glacier area in Chile.

In spite of Jantzi's determination that Barrick did not pass muster as an "ethical" company, Ethical Funds, which relies in part on Janzti's research, continued to advise investors that Barrick was a responsible company to hold in their portfolios. Before Barrick's Annual General Meeting in 2006, Ethical Funds sponsored a shareholder resolution that asked Barrick Gold to commission an independent third party review of the level of support for its Pascua Lama project.[147] As Barrick agreed to commission a review, Ethical Funds withdrew the proposal and continues to sell Barrick to its customers.[147] The review Barrick commissioned sets out what Barrick has done in the way of consultation. However, it does not indicate the level of support for the project.

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In February of 2007, Jantzi Research decided that Barrick has sufficiently pulled up its socks to now meet the eligibility requirements of a responsible company.[148] How did Barrick manage that in less than one year? Jantzi Research says that the company has "made progress" in addressing some of Jantzi's concerns and that other areas of concern have been "substantially mitigated" by "additional information" the company provided to Jantzi Research. Among other things, Jantzi Research found that: Barrick is now engaging with the Western Shoshone as stakeholders; Barrick has agreed to revise the Pascua Lama project – a condition of the Chilean Government – by now mining under the glaciers, and has agreed to monitor its impacts; Barrick is also constructing a fence around its Porgera Mine and is reviewing its security guidelines and policies.

While Barrick has successful mitigated its image for the time being, time will tell how these ethical investment groups respond to the fact that the affected Western Shoshone communities continue to oppose Barrick's presence in their communities, or the fact that Barrick's activities near the proposed Pascua Lama mine have been linked to between 50 and 70 percent decreases in the mass of the three glaciers[149], while this project is still met with much local resistance. Meanwhile, Jantzi Research notes that it still has concerns over the issues at the Marcopper Mine and Riverine Disposal, among others things.

For now, Jantzi Research appears to have buckled under the pressure of the mighty dollar. Jantzi regularly compares the performance of its ethical picks (Jantzi Social Index) to the S&P/TSX composite Index and the S&P/TSX 60, and on May 11 and September 15 of 2006, Jantzi Research noted that not including Barrick Gold had "hurt the [Jantzi Social Index] most."[150] The Ethical Funds Company is happy to continue selling Barrick shares.

CONCLUSION AND RECOMMENDATIONS

The stories told in this report reflect the dirty side of gold mining: massive water depletion, indigenous struggles, government repression, waste, pollution, and poverty. These situations also reveal a story other than of environmental devastation, that of community resistance, grassroots organizing, and courageous leadership.

As the world's largest gold mining company, Barrick represents not just the abuses of one company, but the abuses of an entire industry.

In light of these facts, we recommend that Barrick meet with affected communities and negotiate in full faith with them, recognizing their rights to the land, and accepting local jurisdiction over environmental and human rights conflicts and abuses. Barrick should also compensate victims of past abuses for which it is responsible.

We also recommend that the Canadian government create measures to hold corporations accountable. In particular, we recommend that Canada:

- **establish standards and reporting obligations for Canadian companies;**
- **references international human rights standards and provides for the creation of human rights guidelines for the application of these standards;**
- **incorporates these standards into binding legislation so that compliance is mandatory;**
- **includes provisions for withholding government services from companies in cases of serious non-compliance; and**
- **creates an ombudsperson's office of independent international experts to receive complaints regarding the operations of Canadian companies worldwide and to assess corporate compliance with the standards.**

NOTE: THESE ARE THE RECOMMENDATIONS OF CORPWATCH AND NOT NECESSARILY THOSE OF THE ASSOCIATE GROUPS

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RESISTANCE:

OTHER ORGANIZED ACTIONS AGAINST BARRICK

Barrick's operations have destroyed livelihoods and the environment around the world, as the numerous examples in this report illustrate. Communities from Argentina to Papua New Guinea have organized to demand their basic human rights and resist the exploitation of their natural resources.

They use strategies like grassroots organizing, lawsuits, formal declarations, and protests to communicate their dissatisfaction to the world.

This report is being released on the occasion of Barrick's 2007 annual meeting, which has been declared an International Day of Action Against Barrick Gold by affected communities in six countries.

Nor is this the first time that groups have protested against the company. A few such past protests include:

ARGENTINA: October 20, 2004: The Madres Jachaleras Autoconocados and four other groups in Jachal, Argentina, held its first Congress in Defense of Natural Resources. It also featured a "No a la Mina" ("No to Mining") rock festival, attracting hundreds of youth.

CHILE: June. 4, 2005: An estimated 2,500 people protest against the Pascua Lama Project in Vallenar, Chile. On the same day, a thousand people marched in Santiago, while solidarity events were held in Barcelona, London, and Cambridge.

November 11, 2005: Citizens presented a letter with over 18,000 signatures to the President of Chile, but were met with police violence when they tried to place chunks of ice in front of the La Moneda government palace. The next day, more demonstrations were held in Vallenar and Santiago.

January 25, 2007: 80 people peacefully close an intersection of the roads in Alto del Carmen, to stop mining trucks going to Pascua Lama.

PERU: April 11-12, 2007: A 48 hour "unemployment strike" was held to demand the cancellation of contracts with Barrick's Pierina Mine, Peru. While this protest was supported by the president of the Ancash region, Caesar Alvarez, that did not stop the police from violently repressing the protesters, and killing a nineteen year old boy. This is the third year in row that police have violently clashed with thousands of protesters at a Barrick protest in the Ancash region. (see page 4)

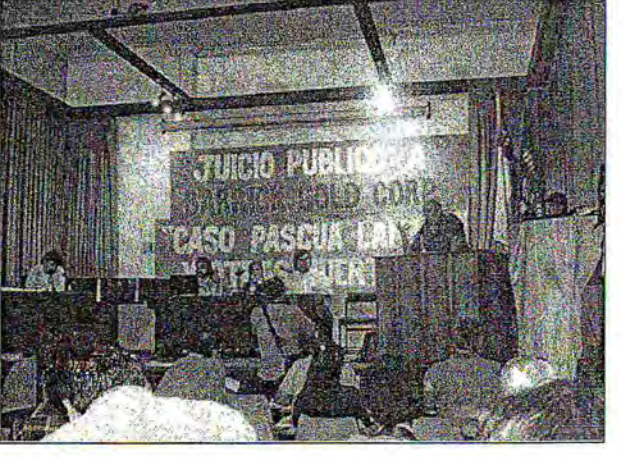
AUSTRALIA: Community opposition to the Lake Cowal gold mine dates back 12 years. Wiradjuri activists and supporters have been protesting against the mine for seven years. Actions at Barrick's Australian and Canadian headquarters and mine site convergences since 2002 have attracted Australian and international demonstrators. In 2006 and 2007, protestors shut down the mine, resulting in arrests.

PNG: April 24, 2007: Local landowners blocked the access route to the mine and forced operations to stop at Barrick's Porgera gold mine.

TITLE PHOTO: MARCH AGAINST BARRICK IN VALLENAR, CHILE JUNE 2005. PHOTO: LUIS MANUEL CLAPS

Transnational Mining Tribunal: The Case of Barrick Gold Corporation in Latin America (Chile, Argentina and Peru)

On November 25, 2006, a panel of judges from civil socitey groups ranging from Amnesty International Chile, to religious and indigenous rights groups, heard testimonies from civil society and traditional communities from Chile, Argentina, and Peru at the Transnational Mining Tribunal in Santiago, Chile. The panel judged "that the mining firm Barrick Gold Corporation is responsible for serious environmental, social, cultural, and economic affronts as a product of its policies, programs and actions against the territories and peoples of Argentina, Chile, and Peru." The judges setenced Barrick "to immediately pay just restitution to the victims of its policies, programmes and actions, and to restore the ecosystems affected by its mining investments." PHOTO: ISABEL ORELLANA



Published May, 2007 by CorpWatch

With contributions from: David Modersbach, Joan Kuyek, Julie Fishel, Catherine Coumans, Grupo No A Pascua Lama (Isabel Orellana, Marie-Ève Marleau, Juan Carlos Chirgwin, Jimena Campos, Gloria Pereira-Pabenburg and Rolando Labraña), Coalition to Protect Lake Cowal Members (Natalie Lowrey, Jane Morrison, Ellie Gilbert, Ruth Rosenhek, Al Oshlack, Binnie O'Dwyer, and Mia Pepper), Sakura Saunders, David Martinez, and Luis Manuel Claps.

Special thanks to: Asaf Zulah, Assembly of the City of La Rioja Against Open-Pit Mining, Azibuike Akaba, Beatriz Vignoli, Brunswick Theatre, Carrie Dann, Christian Peña, Clive Shirley (Global Aware), CONACAMI, David Jay, David Taylor, Jamie Cao, Javier Rodriguez Pardo, Jeb Tankersley, Karina Roitman, Liam O'Donoghue, Lucio Cuenca, Momoko Saunders, Naomi Klein, Natalie Cadranel, Observatorio Latinoamericano de Conflictos, Ambientales (OLCA), Poonam Whabi, Amy with Radical Designs, Rights Action, Sarolta Jane, Sister Maria Jose, Madres Autoconvocados, The Movimiento Ciudadano Anti Pascua Lama, Tim Simons, Tracy Glynn, and Tundu Lissu.

This report was edited by Terry Allen, Sakura Saunders, and Pratap Chatterjee.

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A CORPWATCH REPORT

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in association with:

Western Shoshone Defense Project WWW.WSDP.ORG

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Mines and Communities WWW.MINESANDCOMMUNITIES.ORG

Friends of the Earth, Australia WWW.FOE.ORG.AU

Coalition to Protect Lake Cowal WWW.SAVELAKECOWAL.ORG

Rainforest Information Center WWW.RAINFORESTINFO.ORG.AU

Observatorio Latinoamericano de Conflictos Ambientales WWW.OLCA.CL

Grupo No A Pascua Lama, Montreal

BARRICK'S DIRTY SECRETS

COMMUNITIES WORLDWIDE RESPOND TO GOLD MINING'S IMPACTS

Response No. I-1: *Statements noted. Regarding reference to the Treaty of 1863, please refer to Response O-16 for additional information.*

Response No. I-2: *Statement noted.*

Response No. I-3: *Statement Noted.*

Response No. I-4: *Statement Noted.*

Response No. I-5: *Statement noted.*

JIM GIBBONS
Governor

STATE OF NEVADA

ANDREW K. CLINGER
Director

DEPARTMENT OF ADMINISTRATION
209 E. Musser Street, Room 200
Carson City, Nevada 89701-4298
(775) 684-0222
Fax (775) 684-0260
http://www.budget.state.nv.us/

February 3, 2009

Lynn Bjorklund
US Department of the Interior
Bureau of Land Management
Ely District Office
HC 33 Box 33500
702 No. Industrial Way
Ely, NV 89301-9408

Re: SAI NV # **E2009-172** Reference:

Project: **Bald Mountain and Mooney Basin North Operations Area DEIS**

Dear Lynn Bjorklund:

Enclosed are comments from the agencies listed below regarding the above referenced document. Please address these comments or concerns in your final decision.

Division of Water Resources

State Historic Preservation Office

The following agencies support the above referenced document as written:

Commission on Minerals

This constitutes the State Clearinghouse review of this proposal as per Executive Order 12372. If you have questions, please contact me at (775) 684-0213.

Sincerely,

R. Tietje
Nevada State Clearinghouse

Nevada State Clearinghouse

From: Sue Gilbert
Sent: Wednesday, December 24, 2008 9:49 AM
To: 'clearinghouse@budget.state.nv.us.'
Subject: E2009-172

From: Nevada State Clearinghouse
Sent: Monday, December 22, 2008 9:00 AM
To: Robert K. Martinez
Subject: E2009-172 Bald Mountain and Mooney Basin North Operations Area DEIS - Bureau of Land Management

C-1

NEVADA STATE CLEARINGHOUSE
Department of Administration, Budget and Planning Division
209 East Musser Street, Room 200. Carson City, Nevada 89701-4298
(775) 684-0213 Fax (775) 684-0260

TRANSMISSION DATE: 12/22/2008

Division of Water Resources

Nevada SAI # E2009-172

Project: Bald Mountain and Mooney Basin North Operations Area DEIS

Follow the link below to download an Adobe PDF document concerning the above-mentioned project
for your review and comment.
E2009-172

Please evaluate it with respect to its effect on your plans and programs; the importance of its contribution to state and/or local
areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than Thursday, January 29, 2009.

Use the space below for short comments. If significant comments are provided, please use agency letterhead and include the Nevada SAI number and comment due date for our reference.

Clearinghouse project archive

Questions? Reese Tietje, (775) 684-0213 or clearinghouse@state.nv.us

____No comment on this project __x__Proposal supported as written

AGENCY COMMENTS:

All waters of the state belong to the public and may be appropriated for beneficial use pursuant to the provisions of Chapters 533 and 534 of the Nevada Revised Statutes and not otherwise. All use of drilling water and/or dust control water shall be pursuant to waiver or permit granted by the state engineer. A waiver to drill a temporary water source well to support mineral exploration may be granted by the state engineer upon request and a show of good cause. All boreholes or wells shall be plugged and abandoned in compliance with Chapter 534 of the Nevada Administrative Code (NAC). If flowing water is encountered it shall be controlled as required in NRS § 534.060 (3).

If existing water Permits are to be utilized, verify that the point of diversion, place of use and manner of use are still consistent with proposed usage. If not, contact the Division of Water Resources for additional permitting assistance.

Signature: Diana Lefler

Date: 12/23/2008

Response No. J-1: *Statement noted. The 43 CFR 3809 regulations require that operators comply with all requirements of all agencies that have authority to regulate mine activities.*

1/13

Rebecca Palmer

From: Nevada State Clearinghouse
Sent: Monday, December 22, 2008 9:00 AM
To: Rebecca Palmer
Subject: E2009-172 Bald Mountain and Mooney Basin North Operations Area DEIS - Bureau of Land Management

NEVADA STATE CLEARINGHOUSE
Department of Administration, Budget and Planning Division
209 East Musser Street, Room 200, Carson City, Nevada 89701-4298
(775) 684-0213 Fax (775) 684-0260

TRANSMISSION DATE: 12/22/2008

State Historic Preservation Office
Nevada SAI # E2009-172
Project: Bald Mountain and Mooney Basin North Operations Area DEIS

Follow the link below to download an Adobe PDF document concerning the above-mentioned project for your review and comment.
E2009-172

Please evaluate it with respect to its effect on your plans and programs; the importance of its contribution to state and/or local
areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than Thursday, January 29, 2009.

Use the space below for short comments. If significant comments are provided, please use agency letterhead and include the Nevada SAI number and comment due date for our reference.

The SHPO reviewed the subject document. In general, the SHPO supports the document as written with one exception. On page 3-149 please correct the last sentence in the second paragraph. Surveys over 10 years in age should be evaluated for their adequacy in accord with the existing statewide Protocol Agreement between this office and the Bureau of Land Management or the existing Programmatic Agreement for the subject undertaking. This office does not make such determinations. If you have any questions concerning this correspondence, please contact me by phone at (775) 684-3443 or by e-mail at Rebecca.Palmer@nevadaculture.org.

Rebecca L Palmer 1/8/09

Response No. K-1: *This correction has been made in Section 3.19 of the FEIS.*

From: Nevada State Clearinghouse
To: Lowell Price
Subject: E2009-172 Bald Mountain and Mooney Basin North Operations Area DEIS - Bureau of Land Management
Date: Monday, December 22, 2008 8:59:42 AM

NEVADA STATE CLEARINGHOUSE
Department of Administration, Budget and Planning Division
209 East Musser Street, Room 200, Carson City, Nevada 89701-4298
(775) 684-0213 Fax (775) 684-0260

TRANSMISSION DATE: 12/22/2008

Commission on Minerals

Nevada SAI # E2009-172
Project: Bald Mountain and Mooney Basin North Operations Area DEIS

Follow the link below to download an Adobe PDF document concerning the above-mentioned project
for your review and comment.
E2009-172

Please evaluate it with respect to its effect on your plans and programs; the importance of its contribution to state and/or local
areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than Thursday, January 29, 2009.

Use the space below for short comments. If significant comments are provided, please use agency letterhead and include the Nevada SAI number and comment due date for our reference.

Clearinghouse project archive

Questions? Reese Tietje, (775) 684-0213 or clearinghouse@state.nv.us

____No comment on this project __x__Proposal supported as written
AGENCY COMMENTS:

Signature:

Lowell Price

Digitally signed by Lowell Price
DN: cn=Lowell Price, o=Nevada Division of Minerals, ou=Commission on Mineral Resources, email=Lprice@govmail.state.nv.us, c=US
Date: 2008.12.23 16:11:39 -08'00'

Response No. L-1: *Statement noted.*

M

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Nevada Fish and Wildlife Office
1340 Financial Blvd., Suite 234
Reno, Nevada 89502
Ph: (775) 861-6300 ~ Fax: (775) 861-6301

February 2, 2009
File No. 2009-FA-0057

Memorandum

To: District Manager, Ely Field Office, Bureau of Land Management, Ely, Nevada

From: Field Supervisor, Nevada Fish and Wildlife Office, Reno, Nevada

Subject: Comments on the Draft Environmental Impact Statement for the Bald Mountain Mine North Operations Area Project

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for the proposed Bald Mountain Mine North Operations Area Project (Project), located approximately 65 miles northwest of Ely, Nevada in White Pine County. The Project proposes to expand current mining operations including open pits, rock disposal facilities, heap leach facilities, and haul roads. The expansion will result in a total of 8,080 acres of disturbance within the new boundary encompassing both private and public lands.

The U.S. Fish and Wildlife Service (Service) has reviewed the DEIS and is providing the following comments pursuant to the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*), Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703, and the Bald and Golden Eagle Protection Act, 16 U.S.C. 668. We recommend protection of wetlands pursuant to Executive Orders 11990 (wetland protection) and 11988 (floodplain management), as well as section 404 of the Clean Water Act. Other fish and wildlife resources should be considered pursuant to the Fish and Wildlife Coordination Act, as amended (48 Stat. 401, 16 U.S.C. 661 *et seq.)*, and the Fish and Wildlife Act of 1956, as amended (70 Stat. 1119, 16 U.S.C. 742a).

General Comments

M-1 Based on the information in the DEIS, direct impacts to greater sage-grouse (*Centrocercus urophasianus*) leks are not anticipated as no leks are known to occur within the Project boundary. However, because leks have been documented within a few miles of the Project boundary, greater sage-grouse likely use portions of the Project area as nesting, brood rearing and wintering habitat. The Service is currently conducting a status review for the species for

potential listing under the Act. We recommend the DEIS analyze the impacts that authorization of this Project may have on local and range-wide sage-grouse populations as well as other sagebrush obligate species such as the pygmy rabbit (*Brachylagus idahoensis*).

M-2 We are also concerned with the heap leach ponds and their potential impacts to migratory birds through acute cyanide toxicity. In semiarid areas, these ponds attract migratory birds to certain death if they are not appropriately monitored to ensure exclusionary devices work. Finally, we

M-3 strongly recommend that existing and proposed above-ground power lines be retrofitted or constructed in accordance with *Suggested Practices for Raptor Protection on Power Lines - The State of the Art in 2006* (Edison Electric Institute/Raptor Research Foundation). Information can be found at *http://www.aplic.org/*

Specific Comments

M-4 1. Page 2-38, Section 2.3.9, Support Facilities: The DEIS states that a new power line would be constructed from a substation near the Mooney Basin process facility to the Top/Sage Pit Complex area. The Service urges you to take strong precautionary measures to protect raptors by raptor-proofing power lines. Two primary causes of raptor mortality are electrocutions and collisions with power lines. Therefore, power lines should be designed, constructed or retrofitted in accordance with Edison Electric Institute/Raptor Research Foundation (2006).

M-5 2. Page 3-67, Section 3.8.2, Wildlife Environmental Consequences: The DEIS states that process ponds containing cyanide and other hazardous chemicals would be fenced and covered with polyurethane balls; therefore, impacts to wildlife from hazardous chemicals are not expected. The Service commends the Bureau of Land Management (BLM) for requiring measures to prevent migratory bird and other wildlife contact with potentially lethal chemicals in the pond solution. However, the effectiveness of the fencing and polyurethane balls can only be ensured through monitoring. We recommend that the mine develop and implement a process pond monitoring plan. The BLM and its applicants are obligated under the MBTA to prevent migratory birds from entering these ponds.

M-6 3. Page 3-73, Section 3.8.4, Migratory Birds Environmental Consequences: The DEIS states that land-clearing activities would be conducted outside of the avian breeding season (April 15 to July 15). It also states that if land clearing during the nesting season is necessary, a qualified biologist would survey for active nests and signs of nesting and, if necessary, buffers would be created around active nests until young have fledged. The Service commends the BLM and its applicant for taking actions to minimize impacts to migratory birds. In addition to these measures, we recommend annual avian surveys in areas proposed for development as well as areas under development to determine avian use. This information is valuable during early project planning to ensure compliance with the MBTA.

We look forward to working with you throughout the planning process for this project. If you have further questions regarding our comments or your responsibilities under the Act or other policies mentioned please feel free to contact me or James Harter at 775-861-6300.

for Robert D. Williams

cc:
Project Leader, Ruby Lake National Wildlife Refuge, Nevada

Reference

Edison Electric Institute and the Raptor Research Foundation. Suggested Practices for Raptor Protection on Power Lines - The State of the Art in 2006. Washington, D.C.

Response No. M-1: *Impacts to the sage grouse and pygmy rabbits have been discussed in Section 3.8.6 of the FEIS. Consultation with NDOW confirms the area surrounding the North Operations Area Project has limited use as sage grouse brood rearing habitat because of the lack of water. Additionally, because this project is an expansion of an existing large-scale operation, these species tend to avoid the area because of the level of human activity.*

Response No. M-2: *Section 2.3.5 Design and Operation of the FEIS discusses the exclusionary methods for heap leach ponds that BMM currently use. These procedures would continue to be used with additional ponds for the North Operations Area Project. Any incidents involving migratory birds are recorded and reported to NDOW.*

Response No. M-3: *The construction and/or retrofitting of power lines to meet the criteria in the Suggested Practices for Raptor Protection on Power Lines has been added to Table 2-13 of the FEIS as a design feature.*

Response No. M-4: *See Response M-3.*

Response No. M-5: *See Response M-2.*

Response No. M-6: *The BLM has previously established the avian breeding season for the period of nest building and egg-laying through fledging of young birds. The applicant, in conducting nesting bird surveys during the avian breeding season, meets the requirements established by the BLM. Surveys during this period would be sufficient to ensure compliance with the Migratory Bird Treaty Act.*

N

EUREKA COUNTY BOARD OF COMMISSIONERS

J.P. "Jim" Ithurralde, Chairman
Leonard Fiorenzi, Vice Chairman
Mike Page, Member

P.O. Box 677
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Eureka, Nevada 89316

Phone: (775) 237-5262
Fax: (775) 237-6015
www.co.eureka.nv.us

January 27, 2009

Lynn Bjorklund
Bureau of Land Management, Egan Field Office
HC 33 Box 33500
Ely, Nevada 89301-9408

RE: 380910 NV040, N82888

Dear Ms. Bjorklund:

N-1 Other than as noted in the comments below, the Eureka County Board of Commissioners supports the proposed action of the DEIS for the Bald Mountain Mine North Operations Area Project. We ask that the following comments be considered and addressed in the final EIS:

N-2 1. 3.10.2 Page 3-94—states that the loss of grazing lands and AUMs would "have a negligible effect on grazing." This assertion may carry more weight in this particular circumstance because the grazing permit is held by Barrick Gold and Barrick Gold is in the business of mining. Regardless of whom holds the grazing permit, *any* loss of AUMs is detrimental to the majority of permittees who rely upon these forage resources as a way of life. These impacts can add up substantially over the long-term and these impacts can be quantified (i.e. forage values, loss of livestock production). What may be "negligible" to one grazing permittee may prove substantial to another. It is these grazing lands that have provided and will continue to provide a stable socioeconomic base to rural Nevada counties. In order to avoid setting a negative precedent, any impact to grazing should be quantified, addressed, and mitigation outlined within the final EIS.

N-3 2. 3.11.1 and 3.11.2 Page 3-99—reports that AML of the Triple B HMA is "between 250 and 518" and summarizes the number of horses gathered since 1997 in order to "achieve appropriate management levels." 3.11.2 states that "The BLM's final allotment decisions and control of the number of wild horses in the herd area would maintain wild horse populations at the appropriate carrying capacity of the range." What assurances can be made in keeping the herd at AML when the number of wild horses present in the Triple B HMA is already above the high end AML (555 in July 2008)? An estimate of wild horse numbers currently in the Triple B HMA should also be included in the EIS to allow for full disclosure and understanding of the degree of impact upon wild horses. The DEIS does a fine job in addressing the impacts *to* wild

horses but does nothing to address the impacts *of* wild horses upon other resources. Additional impacts upon forage and water resources in adjacent HMAs (e.g. Diamond Complex) and grazing allotments will undoubtedly occur as wild horses are displaced to these areas. If livestock numbers must be reduced (see comment 1) then wild horse numbers must be reduced as well. Placing stipulations upon grazing permittees without similar stipulations for reducing wild horse numbers is unreasonable. Specific language should be included in the EIS which assures that the BLM will reduce the number of horses in the HMA and keep the HMA at the low AML.

N-4 3. 3.17—the DEIS reports that 14 percent of BMM employees currently live in Eureka. It is anticipated that the same percentages will continue with the proposed action of adding approximately 110 new employees. Page 3-145 states that the total population could increase by approximately 330 people. If 14 percent of 330 people choose to live in Eureka, this would add 46 new people to Eureka. While this number represents only about 3 percent of the total population of Eureka County, these people would live in southern Eureka County thereby increasing the impact disproportionately. Further, page 3-140 states that the County is

N-5 considering leasing properties for development of residential facilities in preparation of the expected housing demands of the Mt. Hope Project. It should be noted that 10 percent of the 200+ units in this proposed development will be available for the general public. Also, many

N-6 developers have recognized the lack of quality housing in Eureka County and have bought land in speculation of future development and some have even had parcels approved. It is reasonably foreseeable that more housing will become available within the very near future and with Eureka being the nearest residential area to BMM, more BMM employees would choose to live in Eureka. Perhaps analysis could be included in the EIS which has a range of impacts that Eureka County can anticipate such as if percentages stay as they are now or if an additional 20-40 housing units become available within the next couple of years.

We appreciate the opportunity to comment on this DEIS and again express our support of the project with any caveats noted in the comments above.

Respectfully,

J.P. "Jim" Ithurralde, Chairman
Eureka County Board of Commissioners

Response No. N-1: *Statement noted.*

Response No. N-2: *The impacts to grazing have been identified for the allotment and not for the current permittee. Impacts have been addressed in Section 3.10.2 of the FEIS.*

Response No. N-3: *The current estimated size of the Triple B Herd Management Area is 555 horses. The initial Appropriate Management Level for the Triple B Herd Management Area, as discussed in the Ely District Approved Resource Management Plan, ranges between 250 and 518 animals. This information has been added to Section 3.11.1 of the FEIS. When adjusting the Appropriate Management Level, the BLM will take into account the available resources in the herd management area.*

Response No. N-4: *Section 3.17.2 of the FEIS discussed the lack of available housing in Eureka and therefore it is anticipated that the majority of the additional employees would choose to live in Ely or Elko. The current trend is for fewer people to live in Eureka. At a rate of 14% with 110 new employees, the increase in population in Eureka is expected to be 15 people.*

Response No. N-5: *Statement noted.*

Response No. N-6: *Statement noted.*

O

Great Basin Resource Watch

85 Keystone Ave., Suite K
Reno, NV 89503
775-348-1986
www.gbrw.org

Our mission is to protect the health and well being of the land, air, water, wildlife, and human communities of the Great Basin from the adverse effects of resource extraction and use.

February 2, 2008

ATTN: Lynn Bjorklund
Environmental Protection Specialist/Minerals
Bureau of Land Management
Ely Field Office
HC 33 Box 33500
Ely, Nevada 89301-9408

Re: comments on the *Draft Environmental Impact Statement for Bald Mountain Mine North Operations Area Project, BLM/NV/EL/ES-GI08/05+1793*

Water related issues

According to the draft Environmental Impact Statement (DEIS) dewatering for pit expansion is not anticipated, and only perched aquifers may be intersected.

0-1 Therefore, the impacts to groundwater are minimal. GBRW does note the potential impact to the Cherry Spring due to loss of recharge areas. The DEIS does not list any mitigation measure for this impact. GBRW recommends that the

0-2 BLM investigate mitigation options. Perhaps the Sage Flat Rock dump should not be expanded with the waste rock handled elsewhere; to be eventually part of the backfill for the pits assuming that it is not acid generating.

0-3 GBRW does support the proposal to backfill pits where it is clear that potential water infiltration will not react disfavorably with the waste rock backfill. The

0-4 DEIS indicates that complete backfilling of the pits was rejected from further analysis due to economic reasons. There should be some data to support this rejection. The environmental argument presented by BLM for partial backfilling is

0-5 certainly even more true for full backfilling. The final EIS should provide more economic analysis information.

The Waste Rock Management Plan (WRMP)[1] states that the rock is generally of oxide type with low sulfide content, and goes on to say that *"Although trace sulfides are present, and available alkalinity for acid generation is limited, acid generation does not occur."* In referring to Appendix A of reference 1, "Quarterly Waste Rock Monitoring Report," indeed this statement is supported. However, more recent acid/base static testing done in 2007 shows a net acid generating capacity[2]. The RBMWF-1 and RBMWF-S samples show that for the 1st Quarter AGP > ANP. It should also be noted that within the same reports the previous reporting quarter, 3rd Quarter 2006, the AGP < ANP. This shows the variation in waste rock as mining proceeds, but it may also indicate the range possible within the realm of static

0-6 testing. In general, there needs to be further testing to get a more accurate

[1] Placer Dome U.S. Bald Mountain Mine, *North Operations Area: Bald Mountain Mine (N-68193)/ Mooney Basin (N46-94-010P) Amendment to Plan of Operations*, *Appendix D*, Elko NV, September 2006.

[2] NDEP form 0090 MWMP/ABA, RBMWF-1 and RMBWF-S.

O-6 prediction of acid generation, and so kinetic testing needs to be done as well. The draft EIS does not contain a plan to handle acid generation should it occur. In particular, Appendix D of the DEIS (which is out of order in the document) does show acid generation characteristics with little to no neutralizing capacity for the BIDA pit rockl It is not clear how the potentially acid generating rock from this pit is to be handled. In our experience, predictions are often far off the mark, so detailed plans are needed for public review to assure that the Bald Mountain Mine will be able to mitigate in the event of acid generation.

O-7 The DEIS does not contain a map showing water monitoring across the site, and anticipated locations of future monitoring wells as the new facilities are developed. It is important for public transparency to reveal the monitoring regiment to assure that it is effective and protects groundwater resources including perched aquifers.

O-8 In the reclamation plan included within in the Plan of Operations (PoO)under the section "Chemical Stabilization" section states: *"Site data indicates that recirculation or rinsing beyond the point in time where economic gold recovery is no longer achieved provided no additional benefits to long-term chemical stability."*[3] Indeed, this is a fortuitous finding for the Bald Mountain. The data and analysis referred to here was not included in the draft EIS and should be. The PoO goes on to state that *"… rinsing is not expected to be beneficial or required to detoxify the heaps…"*[4] GBRW understands these statements to mean that neither recirculating leach fluid or rinsing with fresh water is beneficial. The draft EIS does not, and should, fully explain how this conclusion was reached including supporting data.

Land related issues

O-9 Clearly there are significant impacts to migratory animals, in particular, the mule deer routes go right through the project area. There are a few suggestions in the DEIS to allow for better mobility of the deer across haul roads, pg. 3-68. GBRW suggests that BLM explore more aggressive measures including different haul road routing to avoid known deer trails or other structures like tunnels or overpasses.

O-10 GBRW is very concerned about the loss of Piñon/Juniper forest areas, and strongly recommends the BLM to work with Barrick gold U.S., Inc. to develop an approach to decrease the number of impacted acres.

Air related issues

O-11 The DEIS does not, and should give information as to the mercury content in the ore for reference.

O-12 The State of Nevada Mercury Control Program is mentioned in the DEIS, but there is no discussion of the type of mercury controls that are in place or anticipated controls. Ore samples need to be analyzed for mercury content, and there should be a plan for continued ore testing for mercury as mining proceeds.

[3] Ref. 1, pg. 3-7.
[4] Ref. 1, pg. 3-7

Cultural/community related issues

O-13 The DEIS in the "cultural resources" section, pp. 3-148-3-149, fails to discuss the significance of "pine-nutting" in the general area by Native Americans. The loss of Piñon as discussed in the DEIS is likely to impact this cultural activities and it must be addressed in the EIS.

O-14 There is also no mention of the resolution by the South Fork Band of the Western Shoshone that is in opposition to the project. The EIS needs to address the issues raised in their resolution. Find the resolution attached.

O-15 The negative impacts of the "boom and bust" nature of mining on the local communities is under addressed. The EIS should look at the historical record here and discuss impacts from that vantage point as well as the current economic climate.

O-16 The project is within land outlined in the Treaty of Ruby Valley, between the United States and the Western Shoshone Nation, so mineral rights were reserved and therefore continue to belong to the Western Shoshone Nation. The use of "gradual encroachment" is not a legally valid method of title transfer or extinguishment under existing federal law or recognized standards of human rights. Between February 20 and March 10, 2006 the United Nations Committee for the Elimination of Racial Discrimination, issued a decision of an "Early Warning and Urgent Action Procedure**"** handed down to the United States of America.[5] The decision pertains to US lands and therefore BLM or Forest Service public lands on which the project may in part be located. The relevant aspect of this decision is that the U.S. is to "freeze any plan to privatize Western Shoshone ancestral lands for transfer to multinational extractive industries and energy developers, and desist from all activities planned and/or conducted on the ancestral lands of Western Shoshone or in relation to their natural resources, which are being carried out without consultation with and despite protests of the Western Shoshone peoples." Thus, the project must seek consultation and permission from the Western Shoshone on their lands.

[5] United Nations, International Convention On the Elimination Of all Forms of Racial Discrimination, CERD/C/USA/DEC/1 11 April 2006, "COMMITTEE FOR THE ELIMINATION OF RACIAL DISCRIMINATION, Sixty- eighth session, Geneva, 20 February – 10 March 2006." http://www.unhchr.ch/tbs/doc.nsf/898586b1dc7b4043c1256a450044f331/25eeac288211bee9c1257181002a3cfb/$FILE/G0641251.pdf

Please feel free to contact John Hadder if you have any questions or concerns.

Sincerely,

John Hadder
Staff Scientist
Great Basin Mine Watch

Larson Bill
Western Shoshone Defense Project

cc:
Roger Flynn, Western Mining Action Project

Response No. O-1: *Monitoring of Cherry Spring conducted by Barrick has indicated large fluctuations in the water level at the spring over the last couple of years (Section 3.2, Table 3.2). The reasons for these fluctuations are unknown, but given that there are no developed mine features currently within the Cherry Springs recharge basin, it appears they are likely due to several years of below average precipitation conditions in the region. Because of these recent fluctuations in the water level at Cherry Spring, determining potential impacts based on activities associated with the mine would be difficult. No mitigation is warranted at this time due to the current conditions of the spring and the uncertainty associated with potential impacts to the spring. Barrick will continue to monitor Cherry Spring. It should be also noted the BLM's preferred alternative will result in the removal of 94% of the proposed disturbance in the Cherry Spring recharge basin.*

Response No. O-2: *The BLM selected preferred alternative results in the partial backfill of Sage Flat Pit. This partial backfill would reduce the size of the proposed Sage Flat Rock Disposal Area. This reduction in the proposed Rock Disposal Area in turn reduces the acres within the Cherry Spring recharge area that would be covered by waste rock. The acres of the Cherry Spring recharge area covered by waste rock under the BLM preferred alternative would be 9 acres, which is approximately 52.1 acres less than the Proposed Action and represents only 10% of the recharge area. With the reduction, impacts are anticipated to be negligible. Appropriate changes have been incorporated into the FEIS.*

Response No. O-3: *Statement noted.*

Response No. O-4: *The Partial Backfill Alternative was economically viable because one pit could be backfilled with material from a nearby pit during active operations. This eliminates the need to double-handle waste rock to backfill the pits. Double-handling of material increases fuel needs and therefore combustion emissions, involves effectively doubling the amount of fugitive dust and particulate emissions, requires more water resources, extends the period of time for re-establishing vegetation, and does not decrease disturbance due to the need to stockpile material until mining has been completed in the pit. Additionally, to completely backfill the pits would add significant additional costs to the project. According to the BMM, based on current operating costs of approximately $1.00/mined ton at the site, to double-handle the 631 million tons of material associated with the preferred alternative would cost at least an additional $631,000,000; thus making the project uneconomic. This would result in the Proposed Action not meeting either BLM's or Barrick's purpose and need as stated in Section 1.3 of the FEIS.*

Response No. O-5: *See Response O-4.*

Response No. O-6: *A Waste Rock Management Plan (Plan) has been prepared for the Proposed Action in accordance with BLM guidelines and Nevada Division of Environmental Protection regulation to evaluate waste rock characteristics. Meteoric Water Mobility Procedure, Acid Base Accounting testing, kinetic testing, and mineralogic and geologic assessments were performed and documented in the Plan Section 2.3.4. Additional static and kinetic testing has also been conducted and is reported in Schafer (2009). Findings indicate that the rock types are net neutralizing. As required by Nevada Division of Environmental Protection regulation and BLM guidelines, quarterly Meteoric Water Mobility Procedure, acid base accounting and kinetic*

(where indicated) testing will be performed on the actual mined waste rock material to insure that the predictions made in the Plan are consistent with actual results.

Response No. O-7: *Existing monitoring well locations are shown on Figure 3-4 as Bald 1, Bald 2, MWW 1, MWW 1R, MWW 2, and MWW 3. Proposed monitoring locations are discussed in Section 2.3.6 of the FEIS and shown on Figure 2-12. Additional monitoring locations associated with the heap leach expansion would be determined as part of the permitting process with Nevada Division of Environmental Protection, Bureau of Mining Regulation and Reclamation.*

Response No. O-8: *Rinsing of heap leach pads is no longer an industry standard procedure. Rinsing with freshwater only increases the amount of solution to be managed during draindown. As part of the heap leach closure, leach solution will be recirculated during process fluid stabilization. In addition to recirculation of leach solution, active evaporation would be used to reduce the total volume of solution. Once the solution inventory has been reduced to a level that evapo-transpiration cells could handle, recirculation and active evaporation would be halted. Additional details on the heap leach reclamation and process fluid stabilization are provided in the Plan of Operations (BMM, 2009), which is available for review at the BLM Ely District Office.*

Response No. O-9: *BMM has operated properties within the Plan of Operations boundary since 1983. During this time in operation, even during recent mining activity, no substantial impediments to deer movements have been observed on or near the mine; and deer mortalities on the haul road during the existing operational period are very low. The proposed mine plan used existing routes where possible with limited addition of new roads. The installation of berm gaps along haul roads are a recommendation from the NDOW. The BLM has agreed with this recommendation, with the applicant including this as part of the Proposed Action. Based on this recommendation, the BLM does not believe additional mitigation measures are needed.*

Response No. O-10: *The BLM developed and analyzed two alternatives to the proponents Proposed Action that would decrease the surface disturbance created by the mining activity.*

Response No. O-11: *Based on information received from BMM, the weighted average of mercury content from drill hole data from mining zones for 2008 is 3.16 ppm. This information has been added to Section 3.14.2 of the FEIS.*

Response No. O-12: *Table 3-21 in Section 3.14.2 shows the current mercury controls. The proposed mercury controls are expected to be compliant with the Nevada Maximum Achievable Control Technology or a proposed federal maximum achievable control technology for mercury. See response to O-11 regarding ore mercury content.*

Response No. O-13: *Section 3.12.1 notes pine nut gathering is a current land use and an important part of Native American traditions. Section 3.12.2 notes the impacts from the Proposed Action would be minimal because the current level of pine nut gathering in the area is light and vast amounts of pinyon forest on public land would remain available.*

Response No. O-14: *The BLM only became aware of the June 26, 2007, resolution when it was included with comments to the FEIS. All resources identified in the South Fork Band Resolution No. 07-SF-19 (such as grazing, water resources, pine nut areas, etc.) have been identified and addressed in the FEIS document. Please refer to Responses C 1-3 for additional information.*

Response No. O-15: *The FEIS acknowledges that mining has been a major economic force in the study area since the mid-1800s and the economies of the three counties tend to follow the cycles of hard rock mining activity even today. The 10-year range of county unemployment rates cited in the FEIS show the degree to which economic activity can fluctuate in a relatively short time. Estimating economic impacts is always imprecise because so many factors cannot be predicted; however, the by-county discussion of current economic conditions and IMPLAN modeling results presented in Section 3.17.1of the FEIS would be sufficient to judge the project's likely economic impact.*

Response No. O-16: *The Indian Claims Commission determined Western Shoshone title had been extinguished. This issue and the associated compensation issues have been the subject of numerous lawsuits. While all courts addressing the issue have rejected Western Shoshone claims to continued ownership of these lands, some Western Shoshone still maintain title to their ancestral lands has not been extinguished. The U.S. State Department has responded to the U.N. Committee on the Elimination of Racial Discrimination (CERD) decision--see the Periodic Report of the United States of America to the U.N. Committee on the Elimination of Racial Discrimination concerning the International Convention on the Elimination of All Forms of Racial Discrimination, April 2007. Consultation with Western Shoshone and other potentially affected tribes is ongoing. As noted, the U.S. State Department has disputed the CERD decision and BLM is not required to seek permission for this or other actions on public lands managed by the agency.*

P

----- Forwarded by Lynn Bjorklund/EYFO/NV/BLM/DOI on 01/07/2009 09:51 AM -----

"Larry Kibby"

<lkibby1@citlink.

net>

To

<Lynn_Bjorklund@nv.blm.gov>

01/07/2009 06:05

cc

AM

Subject

Expansions of Bald Mountain and

Mooney Basin mines

Tuesday, January 6, 2008

To: Lynn Bjorklund
BLM Ely District Office
HC 33 Box 33500
Ely, NV 89301

From: Larry Kibby
Elko Indian Colony
1581 Pinenut Circle
Elko, Nevada 89801

Regarding the proposed expansion of Bald Mountain and Mooney Basin

P-1 mines,
my main concerns and interest are:

(A) Water & Ranching Water Right's
(B) The Preservation and Protection of American Indian Cultural and Natural
Resources
(C) The Preservation & Protection of Wildlife and Wildlife Habitat
(D) The Preservation & Protection of Natural Resources

The aforementioned concerns and interest are valid respects that must be
regarded with all due care in any proposed "Expansion" on-going activity in
which Water, Land, Natural and Cultural resources are impacted and I would
hope that "Truth and Honesty" will be utilized in the formation of the EIS
by the Bureau of Land Management.

P-2 The Non-Indian and American Indian Ranching communities have suffered at
various times cut-back's in AUM's due to Drought and Rangeland Fire
conditions. The lack of moisture vital to refurbishing land, water areas
and vegetation has been miminal for many years, this has had a great impact
not only on the Ranching communities but as well as mining projects.

P-3 American Indian Cultural and Natural Resources are abundant and
historically, there have been incidents recorded by archaeology that
indicate that there are area's significant to the history, culture and
belief's of the American Indian, which is to state, that there must be
valid and genuine discussions developed with the American Indian Tribe that
is associated with the area in question.

Present day location of an American Indian Tribe often is not viewed with
respect to past association with area's being established for projects and
or certain activity that has impacts to land, water, cultural and natural
resources, this is not only reckless but is insignificant and can lead to
critical removal of Traces of the Past, which is why it is imperative for

direct contact with the American Indian Tribe that has a past history with the area.

P-4 Wildlife and Wildlife Habitat must be preserved and protected with utmost concern. In the past, areas vital for survival for Wildlife have been pushed aside, or so it seems and this type of action is no longer acceptable in that a serious portion of Wildlife Habitat is distorted and destroyed that also has a critial impact on the lives of Wildlife.

P-5 The environment is serious business, more so such is the preservation and protection of the environment and every feasible effort must be made to address all concerns, interest and issues.

P-6 The Bureau of Land Management must not make invalid excuses to further distort, destroy or desecrate areas for any project, but must provide the General Public with direct and sincere "Facts." Thank you.

Sincerely,
Larry Kibby
Elko Indian Colony
1581 Pinenut Circle
Elko, Nevada 89801

(775) 738-4147

Response No. P-1: *Statement noted.*

Response No. P-2: *Range resources have been addressed in Section 3.10.2 of the FEIS. With the implementation of the Proposed Action, 98 AUMs would be lost. This loss would be temporary as once reclamation has been completed, these areas would be available for grazing again and provide vegetation more suitable for grazing. A permanent loss of 13.5 AUMs would result from the construction of pits and pit berms that would not be reclaimed. Drought and Fires were addressed as interrelated projects in Table 4-2.*

Response No P-3: *Consultation has been conducted and is ongoing with several tribes in the area of the Proposed Action. This consultation is discussed in Section 3.20.*

Response No. P-4: *Potential project impacts on wildlife and wildlife habitats are discussed in Section 3.8.2.*

Response No. P-5: *Statement noted.*

Response No. P-6: *Statement noted.*

Q

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

March 23, 2009

John F. Ruhs, Manager
Ely District Office
Bureau of Land Management
HC33 Box 33500
Ely, NV 89301

Subject: Draft Environmental Impact Statement for the Bald Mountain Mine North Operations Area Project, White Pine County, Nevada [CEQ # 20080518]

Dear Mr. Ruhs:

The U.S. Environmental Protection Agency (EPA) has reviewed the above referenced document. Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) NEPA Implementation Regulations at 40 CFR 1500-1508, and our NEPA review authority under Section 309 of the Clean Air Act. We appreciate the extensions BLM has granted us on the comment due date for this Draft Environmental Impact Statement (EIS).

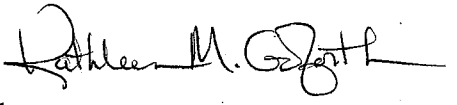
EPA has rated this Draft EIS as EO-2 – Environmental Objections - Insufficient Information (see enclosed "Summary of Rating Definitions and Follow-Up Action"). The proposed project would expand and combine the existing Bald Mountain and Mooney Basin gold mines into one project area to be administered under one Plan of Operation called North Operations Area. Our rating is based on indications, from the limited geochemical characterization in the Draft EIS, that waste rock from several pits could generate leachate with high concentrations of metals and metalloids, and degrade water quality if the leachate should reach groundwater or surface waters, or if pit lakes would form. Such significant impacts must be avoided in order to provide adequate protection for the environment. We also have concerns regarding the project's potential impacts to air quality, and potential impacts associated with a lack of suitable soil for reclamation. The Draft EIS does not contain sufficient information for us to fully assess the environmental impacts that should be avoided in order to fully protect the environment. We recommend the Final EIS include additional information regarding geochemical characterization of waste rock, potential impacts to water and air resources, mitigation and monitoring, and closure and reclamation.

In addition to the proposed action, the Draft EIS evaluates the Partial Backfill Alternative (Alternative A), the Mooney Basin Heap Leach Pad Alternative

(Alternative B), and No Action. Relative to the proposed action, BLM's preferred alternative, Alternative A, would significantly reduce the disturbance footprint of several waste rock disposal areas. If a pit lake would form in the Top Pit and cause an adverse ecological risk or degradation of adjacent groundwater, EPA recommends that Alternative A also include backfilling of the Top Pit to preclude the formation of a pit lake. In addition, it appears from the Draft EIS that combining Alternative B with Alternative A would further reduce the disturbance footprint. EPA recommends BLM consider combining these two alternatives to benefit resources in the project area. Furthermore, we recommend that BLM evaluate a conveyor alternative in more detail and consider incorporating this into the project if resources would be better conserved and/or protected. Our detailed comments are enclosed.

We appreciate the opportunity to review this Draft EIS, and request a copy of the Final EIS when it is filed with our Washington, D.C. office. If you have any questions, please call me at (415) 972-3843, or have your staff contact Jeanne Geselbracht at (415) 972-3853.

Sincerely,



for Enrique Manzanilla, Director
Communities and Ecosystems Division

004963

Enclosures: EPA's Summary of Rating Definitions and Follow-Up Action
EPA's Detailed Comments

Cc: David Gaskin, Nevada Division of Environmental Protection
Christine Hansen, U.S. Army Corps of Engineers, Reno

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

Bald Mountain Mine North Operations Area Draft EIS
EPA Comments – March, 2009

Water Resources

Water Quality Impacts

The Draft EIS (p. 3-33) states that the waste rock would not leach waters that are high in acidity or metals content. However, neither the Draft EIS nor the *Baseline Geochemical Assessment for the Proposed Bald Mountain Mine North Operations Area Expansion* (Schafer, 2008) referenced in the Draft EIS provides sufficient information regarding waste rock geochemistry to support this conclusion. In addition, some information in the Draft EIS appears to contradict it.

Q-1

For example, the Draft EIS (p. 3-15) states that there would be no impacts to surface water quality from the Top Pit waste rock. However, Meteoric Water Mobility Procedure (MWMP) results in Appendix D indicate that numerous Top Pit samples exceeded water quality standards for several metals and metalloids, and two samples were above 10 times the drinking water standard for mercury. In addition, several samples from the Bida Pit also exceeded water quality standards for several metals. One sample exceeded the mercury drinking water standard by 40 times, and one sample exceeded the copper aquatic life standard by 80 times. Some Saga pit samples also exceeded water quality standards, and nickel exceeded the drinking water standard by more than 20 times in one sample. Some samples from these pits also indicate some potential for acid generation. However, the Draft EIS does not provide mass balance information for each pit and waste rock disposal area to indicate whether there is sufficient acid neutralizing material in each of these areas to adequately neutralize and isolate any acid generating waste rock. The waste rock dumps must be properly designed to prevent generation of leachate, but it is unclear how this will be accomplished.

Recommendation: The Final EIS should describe how the waste rock dumps will be designed to prevent generation of leachate that could degrade surface water or groundwater quality. (See also our comment on appropriate growth medium below). Individual plans should be specifically developed for waste rock from those pits with higher potential for acid generation and metals leaching. The Final EIS should specify how and where waste rock from these pits would be

Q-1

disposed, specify the acid neutralization potential the surrounding waste rock would need to meet for this purpose, and clarify whether sufficient neutralizing material would be available when it would be needed for this purpose. The Final EIS should also describe how waste rock facilities would be designed to ensure against leaching of contaminants that are mobile under non-acidic conditions.

Recommendation: The Final EIS should include a map showing the location of pits and waste rock facilities (indicating areas with higher contaminant leaching potential) and intermittent streams and areas with shallow groundwater.

Q-1 **Recommendation:** The Final EIS should describe all surface water and groundwater monitoring that would be required for this project, as well as mitigation measures that would be implemented if water quality is degraded.

The Draft EIS (2-33) states that the open pits would not encounter the deeper groundwater aquifer because the current pit configurations lie above the potentiometric surface. However, the 7000-foot potentiometric surface appears to bisect the Top Pit, which would be excavated to an elevation of 6,500 feet above mean sea level (Draft EIS, Table 2-6). It appears, therefore, that a deep pit lake would form here. Test results from a number of Top Pit samples indicated low neutralization potential and generated leachate with high concentrations of arsenic, mercury, nickel, zinc, and other pollutants.

Q-2 **Recommendation:** The Final EIS should provide a detailed discussion, including an ecological risk assessment, regarding the potential for, and impacts of, a post-mining pit lake in the Top Pit. The discussion should address the chemistry of Top Pit wall rock and how it would affect pit water quality. The Final EIS should identify measures to mitigate all potential adverse impacts of a pit lake in the Top Pit. If a pit lake would potentially adversely affect biological resources, EPA recommends the FEIS thoroughly evaluate an alternative that involves backfilling the pit with appropriate waste rock to preclude the formation of a pit lake. The discussion should identify waste rock specifications (e.g., geochemistry, amount, depth, cap/cover) for backfilling and justify such specifications.

Recommendation: The Final EIS should discuss whether pit water would flow through the pit into adjacent groundwater. If pit water would degrade groundwater, the Final EIS should describe how groundwater would be affected, and identify effective mitigation measures.

The potentiometric surface (7,000 to 7,500 feet above mean sea level) also appears to bisect the Sage Flat Pit, which would be excavated to an elevation of 7,150 feet above mean sea level. This pit would be backfilled under Alternative A. However, it is unclear from the Draft EIS whether it would be backfilled to above the potentiometric surface, precluding pit lake formation.

Q-3 **Recommendation:** The Final EIS should provide the specifications for backfilling the Sage Flat Pit and indicate whether a post-mining pit lake is expected to form above the backfill. If so, the Final EIS should provide a detailed discussion, including an ecological risk assessment, regarding the impacts of a pit lake in the Sage Flat Pit. The discussion should address the chemistry of Sage Flat Pit wall rock, how it would affect pit water quality, and whether water would flow through the pit into groundwater. If pit water would affect groundwater, the Final EIS should describe how groundwater would be affected and how impacts would be mitigated. If a pit lake would potentially adversely affect biological resources, EPA recommends the Final EIS thoroughly evaluate backfilling the pit to preclude the formation of a pit lake.

Geochemical Characterization

The Draft EIS and Schafer (2008) provide limited information on geochemistry within the project area. No mineralogic information is presented, which causes uncertainty about the acid generating potential (AGP) and acid neutralizing potential (ANP) of the material. Furthermore, the mineralogic sources of contaminants of concern, including arsenic, antimony, copper, and zinc, are unknown. Additional information is needed to more reliably predict the long-term leaching ability of the mined materials. There may be relationships between the results of kinetic tests, acid-base accounting (ABA) tests, MWMP, and whole rock analysis that could help establish methods for easily identifying high contaminant leaching materials in the field. However, several questions exist regarding geochemical characterization of the waste rock, which need to be answered before these relationships can be identified.

Q-4

Kinetic Tests. The results of the ABA testing (Schafer, 2008, Appendix B) suggest that the vast majority of samples have high neutralizing ability and low acid generation potential. However, the kinetic testing was conducted on samples within only a narrow range of ABA values, so the long-term leaching ability of all rock types or geochemical test units is unknown. Only three composite samples were subjected to kinetic testing, and the tests lasted for only 20 weeks. Samples with both low ANP and low AGP can take substantially longer to generate acid than rocks with more moderate ANP and AGP values. Very low amounts of sulfate were released compared to the amount of pyritic sulfur in the samples (Schafer, 2008, p. 29). This result demonstrates that much more acid generation could have occurred if the samples had been run for longer than 20 weeks. Longer kinetic testing would help determine the longer-term leaching ability of contaminants of concern and the longer-term acid-generation potential of mined materials at the project site. The results of the kinetic tests are also not addressed in the Draft EIS.

> **Recommendation:** Kinetic tests should be run on the full range of rock types and ANP:AGP ratios in the project area. Tests may need to be run for one year or longer. Concentrations of contaminants of concern should be measured to assess the long-term ability of the materials to produce acid and leach contaminants. This information should be used to verify and update the relationships between the results of kinetic tests, ABA tests, MWMP, and whole rock analysis to establish more reliable methods for easily identifying high contaminant leaching materials in the field.

ABA Tests. It appears that Schafer (2008) used the modified Sobek method for calculation of AGP. However, it is unclear whether the modified Sobek or the original Sobek method was used for determination of ANP. If the original Sobek method was used, the neutralization potential is likely overestimated. The exact method used to calculate ANP needs to be clarified. In either case, the mineralogic basis for the ANP was not evaluated. In addition, Schafer (2008) usually presented the ABA results in terms of net neutralization potential (NNP) rather than ANP:AGP ratios. ANP:AGP ratios are preferred because they apply over a wider range of values. In addition, Schafer (2008)

Q-5

used the Net Carbonate Value (NCV) test to assess acid-generation potential, but did not conduct NCV and Sobek methods on any of the same samples to determine whether the conversion factor used was appropriate.

Q-5

Schafer (2008, p. 13) states that the NCV results showed that of the 1,547 samples tested, 51 had NNP values less than 0, and 55 had ANP/AGP ratio less than 1.2:1. It is unclear why BLM standard categories for NNP and ANP/AGP screening were not used (i.e., uncertain range for NNP is –20 to +20 kg/t as $CaCO_3$, and for ANP:AGP ratio is 1:1 to 3:1). Using the too-low cutoff values, 28.5% of the Saga waste rock had low NNP (Schafer, 2008, p. 13). If more appropriate cutoff values were used for net neutralizing material, for example, a higher percentage of the Saga material would be considered potentially acid-generating than is estimated in the Draft EIS.

> **Recommendation:** The Final EIS and Schafer report should clarify the method used to calculate neutralization potential. If the modified Sobek method was not used, the values for ANP and NNP are likely overestimated, and the AGP is higher than reported. The ABA results (using the Sobek method) should also be presented in ANP:AGP ratios. A number of split samples should be subjected to both the Sobek (modified for ANP calculation) and NCV tests to determine whether application of the conversion factor between Sobek and NCV results is valid.

MWMP. Results from the MWMP tests showed that a number of samples leached elevated concentrations of arsenic, antimony, and mercury under neutral pH conditions. MWMP results also showed that metals that were less enriched (such as copper, zinc, and sometimes lead) were more mobile than the results of the whole rock analysis might suggest (DEIS, Appendix D; Schafer, 2008, Appendix B). Schafer (2008) states that the

Q-6

mobility of metals is low at Bald Mountain because of the low rainfall, pervasive alkaline conditions, and the abundance of iron, which can adsorb oxyanions such as arsenic and antimony (p. 22). However, the results from the MWMP and kinetic tests (Schafer, 2008, Appendices B and C) show that iron leachate values are low, with many values below detection and very few values above 1 mg/L. Therefore, iron may not provide much adsorption capability. There seems to be very little relationship between the ABA results and the MWMP metal/metalloid values. Therefore, the results from static ABA testing may not provide a good indication of the contaminant leaching potential and the need for special handling for this part of the project.

Whole Rock Analysis. The results from the whole rock analysis and MWMP tests show that all rock types are especially enriched in arsenic, antimony, and mercury, all of which can easily leach under neutral pH conditions, and that metals such as copper, zinc, and lead can be mobile and at high concentrations in certain areas. Saga and Top areas have higher concentrations of arsenic, antimony, and mercury than other areas. For example, approximately 50% of the samples from these pit areas had mercury concentrations above 1 mg/kg, and concentrations reached as high as 10 to 50 mg/kg (background or unenriched values are ~0.07 to 0.35 mg/kg for all rock types) (Schafer, 2008, p. 26). Carbonates were highly enriched in antimony (over 100 times higher than background

values); arsenic, tellurium, cobalt, mercury, thallium (between 10 and 99 times higher than background); and somewhat enriched in elements such as niobium, selenium, and copper (two to ten times higher than background) (Schafer, 2008, Figure 21 and Appendix B). Clastic rocks were highly enriched in antimony (1,000 times background), highly enriched in arsenic (almost 300 times background), and somewhat enriched in cobalt, mercury, and nickel (between three and 10 times background) (Schafer, 2008, Figure 23 and Appendix B). Elements enriched in intrusive rocks included arsenic and antimony (over 100 times background), selenium, tellurium (between 10 and 100 times background), and mercury and thallium (between two and 10 times background) (Schafer, 2008, Figure 25 and Appendix B).

Q-6

Recommendation: The Final EIS should include additional geochemical analysis on the mineralogy of the mined material, the availability of acid-generating and acid-neutralizing minerals, and the material's ability to leach contaminants. The percent of calcite, dolomite, and siderite should be determined in samples from all waste rock and pit locations (or geochemical test units). All test data should be made available electronically (e.g., in Excel or Access), and relationships between leachate concentrations and ABA, sulfide, or other measurements made easily in the field should be evaluated.

Recommendation: The Final EIS should include a map and cross-sections depicting the locations of static and/or kinetic test samples, and should describe and discuss the extent to which they are representative of the pits and proposed pit expansion areas. The Final EIS should provide a more detailed characterization of waste rock geochemistry, including a mass balance of waste rock from each pit and existing waste rock dump identifying how much is potentially acid generating, potentially acid neutralizing, or inert.

Existing Water Resources

According to the Draft EIS (3-13), most springs in the area meet Nevada water quality standards with the exception of arsenic, which exceeds standards in most springs. The Draft EIS (3-28) presents data from 2005 through 2007 to demonstrate background arsenic values in various groundwater monitoring wells. However, neither referenced water quality data from 1994 and 1995 nor earlier (1980's) data are not provided as a comparison to the 2005 to 2007 data to verify that impacts are not the result of mining.

Q-7

Recommendation: The Final EIS should provide earlier monitoring data to substantiate that present background arsenic concentrations were not caused by previous mining activities. Similarly, other potential contaminants (e.g. antimony, mercury, selenium, nitrates) should be evaluated comparing early data with more current data to demonstrate whether or not impacts from previous mining have occurred.

Q-8

According to the Draft EIS (3-33), impacts to groundwater quality as a result of the proposed action are not anticipated, based on no detected impacts under the current

operations. Schafer (2008) also notes that seepage or flow has not been observed from the existing waste rock dumps since inception of operations in the early 1980's. However, data are insufficient to support this conclusion because efforts have not been made to detect and monitor waste rock seepage beyond that of visual observations.

In addition, the Draft EIS (3-16) states that Cherry Spring has recently exhibited water levels well below ground surface although there was flow in the past, and the current water level and cause of the decrease are not known at this time. The proposed project would cover 65.1 acres of the 130.5 acre recharge area for Cherry Spring.

Q-8

Recommendation: The Final EIS should provide and evaluate all water monitoring data for the entire mine area to distinguish baseline conditions versus any water quality and quantity impacts from mining thus far. A map should be provided showing the monitoring locations, and trend analysis should be conducted. The adequacy of the existing monitoring system to detect leachate and impacts to water resources should be evaluated and modified as necessary, and this should be addressed in the Final EIS. Additional leachate collection features may be needed, for example at the toe of rock disposal areas, along with additional surface water/stormwater and groundwater monitoring in drainages potentially affected by those areas.

With the exception of Cherry Spring, it is difficult to discern the juxtaposition of water resources and mine facilities in the Draft EIS. A map that depicts existing and proposed mine facilities, including run-on/run-off channels and diversions, and water resources as they would look before, during, and after the proposed mining operations would facilitate an understanding of the various alternatives' potential impacts to water resources.

Q-9

Recommendation: The Final EIS should include a large-scale map that includes existing and proposed mine facilities as well as water resources as they would look before, during, and after the proposed mining operations.

Clean Water Act Section 404

The Draft EIS (p. 3-3) indicates there may be no waters of the U.S. in the project area, and a survey of surface waters in the area has been submitted to the U.S. Army Corps of Engineers for concurrence and approval.

Q-10

Recommendation: The Final EIS should provide the results of the U.S. Army Corps of Engineers' jurisdictional delineation for the project site.

If it is determined that there are jurisdictional waters within the project area, a Clean Water Act (CWA) Section 404 permit will be necessary for any discharges of dredged or fill material into these waters, including wetlands and other special aquatic sites, and EPA will review the project for compliance with *Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials* (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA. Any permitted discharge into waters must be the Least

Q-11

Environmentally Damaging Practicable Alternative available to achieve the project purpose.

Q-11

Recommendation: If, under the proposed project, dredged or fill material would be discharged into waters of the U.S., the Final EIS should discuss alternatives to avoid those discharges and demonstrate the project's compliance with the 404(b)(1) Guidelines. In addition, the Final EIS should identify and commit to any required mitigation for impacts to waters of the U.S.

Soil Resources

The Draft EIS (p. 3-51) indicates that approximately 7.7 to 12.8 million cubic yards of growth medium would be available for salvage from the 3,920 acres of proposed disturbance. The document also indicates, however, that 91 percent of the proposed action area contains soil associations that are not suitable for growth medium. It is unclear how much suitable and highly suitable soil will be available for reclamation, how much additional soil amendment may be needed to improve growth medium to a suitable condition, where additional soil amendment would be obtained if needed, and the impacts associated with using this additional material (e.g., borrow area locations and acreages, etc.).

Q-12

Recommendation: The Final EIS should clarify how much suitable and highly suitable soil will be available for reclamation and how much additional soil amendment may be needed to improve growth medium to a suitable condition, as well as identify where additional soil amendment would be obtained if needed.

Although evaporation and transpiration can be employed with the goal of zero-discharge, it is difficult to achieve this if the appropriate amount and type of cover and growth medium are not used. The Draft EIS indicates that 6 to 12 inches of growth medium would be placed on facilities during reclamation. It is unclear that this is an adequate thickness for a cover that would not only accommodate successful revegetation, but act as a store-and-release cover as well. In light of the geochemistry data provided in Appendix D, it appears meteoric water should be precluded from infiltrating waste rock dumps and leach pads to the extent possible.

Q-13

Recommendation: The Final EIS should discuss how the appropriate thickness of growth medium was determined and whether it will effectively preclude meteoric water from infiltrating waste rock dumps and leach pads. We recommend growth medium be of sufficient thickness to accomplish this. The Final EIS should identify how much growth medium will be needed for this purpose and discuss whether it will be available.

Air Resources

Mercury Emissions Controls

Table 3-19 in the Draft EIS (p.3-122) identifies existing mercury emissions controls for each thermal unit at the mine, as well as the proposed Nevada Maximum Achievable Control Technology (NvMACT) for mercury for these thermal units. The Draft EIS states that installation of these NvMACT controls would reduce mercury emissions
Q-14 from 57.4 pounds/year to 14.2 pounds/year. Fugitive sources at the mine would also contribute 0.27 pounds/year. In a discussion of unavoidable adverse impacts on page 3-165, the Draft EIS states that these fugitive and thermal sources at the mine would emit 57.7 pounds/year of mercury. It is unclear when the identified controls would be installed and the estimated 43.2 pounds/year reduction would be realized.

> **Recommendation:** The Final EIS should indicate when the additional mercury controls would be installed and the estimated mercury reductions realized.

Particulate Emissions Mitigation Measures

The Draft EIS provides direct and indirect criteria air pollutant emissions estimates associated with the mine. We recommend BLM consider including measures to reduce emissions of diesel particulate matter (DPM) from fugitive sources at the mine.

> **Recommendation:** We recommend the following DPM emission reduction measures.

Q-15

- Use particle traps and other appropriate controls to reduce emissions of DPM and other air pollutants. Traps control approximately 80 percent of DPM, and specialized catalytic converters (oxidation catalysts) control approximately 20 percent of DPM, 40 percent of carbon monoxide emissions, and 50 percent of hydrocarbon emissions;
- Use diesel fuel with a sulfur content of 15 parts per million or less, or other suitable alternative fuel, which substantially reduces DPM emissions. This standard will be required after June 2010. (See http://www.clean-diesel.org/nonroad.html);
- Minimize construction-related trips of workers and equipment, including trucks and heavy equipment;
- Lease or buy newer, cleaner equipment (1996 or newer model);
- Employ periodic, unscheduled inspections to ensure that construction equipment is properly maintained at all times and does not unnecessarily idle, is tuned to manufacturer's specifications, and is not modified to increase horsepower except in accordance with established specifications.

Closure, Reclamation and Post-Closure

According to the Draft EIS (p. 2-19), post-closure fluid monitoring would continue for a minimum of five years for each closed component. However, the Draft EIS (p. 2-49) also states the period needed to manage draindown solutions ranges from several years to 20 years. While it is helpful to know the minimum monitoring requirements, it is most important to determine the maximum requirements for the purpose of determining long-
Q-16 term treatment; corresponding operations, maintenance, and monitoring requirements; and respective bonding.

> **Recommendation:** EPA believes a conservative approach to long-term requirements should be adopted by BLM. This would include requirements for monitoring and treatment as necessary as long as draindown solutions or leachate is discharged, and would assume this is required for up to 20 years for the purposes of closure planning and bond determination.

According to the Draft EIS (pp. 2-49, 2-50), information from the site closure studies of five closed heaps within the mining district has been used to determine that the heaps can be safely closed. At four of the five mines, this included vadose zone infiltration systems for residual drain down solutions, and this approach appears to be intended for closure of the existing and proposed leach pads. The Draft EIS indicates that the ore and waste rock that would be excavated under the proposed project are similar to material currently
Q-17 being mined. Therefore, it should be feasible to make a reasonable prediction of the residual heap leach draindown chemistry now, rather than waiting until two years before heap closure.

> **Recommendation:** The Final EIS should provide a reference for information on leach pad closures in the district and make it available for evaluation. The Final EIS should also provide a detailed description of the subsurface in the vicinity of the Bald Mountain and Mooney Basin leach pads and discuss the predicted interactions of residual draindown in the subsurface.

It is unclear from the Draft EIS what post-operation surveillance would be required to ensure that neutralization and/or stabilization of mining waste sites has been effective.

Q-18

> **Recommendation:** We recommend that the Final EIS discuss commitments for post-operation surveillance to ensure that neutralization and/or stabilization of mining waste sites has been effective. Describe the mitigation actions that would be taken should destabilization or contamination be detected, and identify who would be responsible for these actions.

Q-19 The EIS provides the public the opportunity to weigh in on the adequacy of the bond amount. The viability of the bond can be a critical factor in whether or not a project is environmentally acceptable. Therefore, this information should be disclosed in the EIS.

Q-19

Recommendation: The Final EIS should identify the bond amounts for each closure and reclamation activity at all of the proposed project facilities. Identify who would be responsible for any post-closure cleanup actions should they be necessary.

The Draft EIS does not discuss whether long-term post-closure operations and maintenance or monitoring may be necessary for this project.

Q-20

Recommendation: The Final EIS should discuss whether long-term post-closure operations and maintenance or monitoring may be necessary, describe these activities, indicate the projected costs for these activities, and discuss any requirements BLM would impose on the mine operator to establish a trust fund or other funding mechanism to ensure post-closure care, in accordance with 43 CFR 3809.552(c). The financial assurance necessary to fund post-closure activities must be kept current as conditions change at the mine, and BLM should ensure that the form of the financial assurance does not depend on the continued financial health of the mine operator or its parent corporation. If a trust fund would be needed, the Final EIS should include a general description of the trust fund. The mechanics of the fund are critical to determining whether sufficient funds would be available to implement the post-closure plan and reduce the possibility of long-term contamination problems.

Project Alternatives

Q-21

Relative to the proposed action, BLM's preferred alternative, Alternative A, would significantly reduce the disturbance footprint of several waste rock disposal areas. It appears from the Draft EIS that combining Alternative B with Alternative A would further reduce the disturbance footprint, which would result in the disturbance of fewer acres of pristine habitat in the Mooney Basin.

Recommendation: EPA recommends BLM consider selecting a combination of Alternatives A and B as its preferred alternative to benefit resources in the project area.

Q-22

The Draft EIS (p. 2-69) states that conveyors to transport ore were eliminated from further analysis because the disturbance from conveyors would be the same as, or greater than, the disturbance from the Proposed Action and, therefore, conveyors offer no additional benefit. We do not believe the short discussion in the Draft EIS supports this conclusion. For example, it is unclear why maintenance roads along the conveyors would disturb as many acres as mining haul roads. In addition, the Draft EIS does not evaluate nor compare the energy use and air emissions of haul roads versus conveyors. This information is needed to determine if incorporating this alternative into the project would further reduce resource impacts.

Q-22

Recommendation: The Final EIS should describe acreages that would be needed for maintenance roads along conveyors and compare them to acreages of haul roads the conveyors would replace. A map depicting the conveyors and the roads they would replace would be useful. The Final EIS should also estimate and compare the energy consumption and air pollutant emissions, including greenhouse gas emissions, associated with using haul roads versus conveyors to transport ore to processing facilities. If resources would be better conserved and/or protected with a conveyor alternative, we recommend BLM consider incorporating this into the project.

Q-23

The differences between leach pad configurations and sizes under the proposed alternative and Alternative B are not discernable from the maps in Chapter 2 of the Draft EIS.

Recommendation: The Final EIS should clarify how the leach pads would be reconfigured and downsized under Alternative B.

Response No. Q-1: *An addendum to the Baseline Geochemistry Report (Schafer, 2009)(available in the Administrative Project File) has been prepared which includes additional information regarding the potential for the various materials to produce acid or leach metals. The additional testing focused on the pit areas that showed the potential for acid generation during the previous testing. These areas include the Saga and Bida pits. The results of the subsequent testing showed results very similar to results obtained in previous sampling and analysis. The estimated average net neutralizing potential for the LJ Ridge, North Pit 1 through 3, Rat, and Top/Sage pits at BMM were shown to range from 365.4 to 720.6 kilograms per ton as calcium carbonate. Based on this data and analysis, there is little risk acidic conditions would form within the rock disposal areas for these pits particularly when utilizing the comingled rock placement currently in place at the mine that results in mixing alkaline limestone and dolomite with rocks containing higher sulfide content. However, upon reviewing these concerns, additional measures have been added to the plan of operations and reclamation plan to assure that the potential for environmental impacts from acid generation will be minimized. Description of reclamation, closure, and monitoring are in Section 2.3.14 of the FEIS. Post reclamation topography is shown on Figure 2-13 of the FEIS and monitoring locations are shown on Figure 2-12 of the FEIS. A specific waste rock sampling and blending program at the Saga and Bida pits will include the following measures:*

- *The waste rock will be sampled from the drill blast holes. The samples will be tested for acid generating potential and acid neutralizing potential using the net carbonate value method.*

- *Any waste rock with net neutralization potential values less than 0 kilogram per ton will be considered to be potentially acid generating and will be segregated and routed to the rock disposal area for blending with non-potentially acid generating material.*

- *The test results and the waste rock tonnages requiring special handling and blending will be reported to BLM and Nevada Division of Environmental Protection on a quarterly basis.*

In addition, an evaluation of the mass balance of waste rock amounts and average net neutralizing potential values has been conducted and is included in the FEIS (Table 3-2). The information from this analysis shows that while some of the individual formations may have low net neutralizing potential values, they are greatly outweighed by the limestone materials that are also available. The net neutralizing potential values for the pits of concern (Saga and Bida) average between 150 and 200 kilograms per ton. The pits also have acid neutralizing potential:acid generating potential ratios which greatly exceed the 3:1 ratio of concern recommended by the BLM.

The comment also identifies concerns about leaching of metals from the Saga, Bida and Top rock disposal area's under neutral conditions. The available data and analyses indicate that the potential for impacts from metals leaching is small because of several factors that serve to limit or minimize mobilization of metals within the rock disposal areas. These factors include placement of topsoil covers and revegetation during closure to reduce net infiltration of meteoric water, neutralization of acidity along flow pathways in the rock disposal areas, formation of secondary precipitates along flow pathways that will reduce iron, aluminum and base metal mobility in the rock disposal areas, underlying unconsolidated sediments and bedrock having large neutralization and attenuation capacity and sorption and other attenuation mechanisms

that will reduce mobility of arsenic, antimony, mercury and other soluble base metals along flow pathways in the rock disposal areas.

While the potential for impacts is expected to be small, additional measures have been incorporated into the plan of operations and reclamation plan to further reduce potential impacts from leaching of metals. The measures include:

- *The reclamation plans for the Saga, Bida and Top rock disposal area's have been modified so that there will be no large, flat surfaces on the tops of the facilities that would allow water to pond after reclamation and closure. The revised reclamation plan will require adequate placement of material at closure so that the top of each rock disposal area will be "rounded" to promote surface runoff from the top of the rock disposal area.*

- *After final grading of the Saga and Bida rock disposal area's during reclamation, there will be 6 to 12-inchs growth media (depending on availability) cover placed on the rock disposal areas prior to seeding with the approved BLM seed mixture. This soil/vegetative cover will reduce the infiltration of meteoric water and enhance evapotranspiration.*

- *The side slopes of the Saga, Bida and Top rock disposal area's will be modified to steepen the slope angles to a nominal 2.5 horizontal to 1 vertical. This change will reduce the residence time of water on the rock disposal area face and increase the run-off rate, further reducing the potential for infiltration.*

- *The engineering design for the drainage channel network for the Saga, Bida and Top rock disposal area's will be modified to account for the slightly higher flow rates resulting from the steepening of the side slopes and to prevent erosion.*

Response No. Q-2: *The potentiometric map provided in the DEIS was incorrect. A corrected map is provided as Figure 3-4 in the FEIS. The original potentiometric maps were prepared electronically using data that was given a weighted importance based on the assumed validity of the water level information. Exploration drilling has always indicated these pits would be dry. Additional borehole data produced a contour map which more accurately represents the conditions at the Proposed Action. The corrected map shows that the water table is located below both the Top and Sage Flat pits. Neither the proposed action nor BLM's preferred alternative is expected to intersect the water table in either pit.*

Response No. Q-3: *See Response Q-2.*

Response No. Q-4*: The composition of the geologic materials at BMM is discussed in Section 3.3 and shown on Figure 3-7. The rock in the Top, LJ Ridge, North Pits 1 through 3, and Rat Pit areas include minerals formed from circulation of low-sulfur, reduced hydrothermal fluids associated with the emplacement of the Bald Mountain pluton. The mineralization occurs in zones around the contact area, which is centered on the Top Pit area. The Saga and Bida pit areas were mineralized later with silica- and pyrite-rich fluids. The gold mineralization in this area is confined to favorable strata, especially the Pilot Shale.*

Whole rock analysis has also been completed as part of the Schafer (2009) report (available in the Administrative Project File). The analyses utilized the whole rock analyses as a surrogate

for estimating acid neutralizing potential. If neutralization capacity is purely dependent upon calcite and dolomite, the acid neutralizing potential values should correlate with the total calcium and magnesium in the rock. The correlation worked well for younger and less altered materials. For rocks that were highly altered, the surrogate acid neutralizing potential method overestimated the acid neutralizing potential values. It is assumed this is due to the calcium and magnesium being altered to skarns and hornfels where some of the original calcite and dolomite have been converted to other minerals.

The kinetic testing program was based on the results of the static tests and focused on the lower Net Neutralizing Potential material. The kinetic program was developed in accordance with BLM's Acid Rock Drainage Policy. Results from the kinetic tests indicate that the rate of sulfur oxidation is low with low levels of sulfate and some metals observed. This supports the conclusion in the FEIS that acid generation from these rock disposal areas is not expected due to the effects of mixing alkaline rock from the Guilemette formation, slow sulfide reactivity, and hydrologic and climatic factors that minimize the movement of water into and through the RDA's. The additional measures added to the Plan of Operations and Reclamation Plan, as described in responses Q1 and Q2, will further reduce the potential of acid generation from the rock disposal areas.

There are currently six ongoing kinetic tests from the following four borehole samples and two quarterly composites: SG-1054 (195-220 feet), SG-1054 (355-380 feet), SG-1009 (50-100 feet), SG-1043 (40-80 feet), B3WF_INT_OX (1st quarter 2009), and SWF_SED_OX (1st quarter 2009). In response to the comment, these kinetic tests will be continued for a total of 52 weeks. Additional data from the extended tests will be evaluated.

***Response No. Q-5**: A detailed comparison of the modified Sobek method and the net carbonate method has been included in Schafer (2009) (available in the Administrative Project File). The Sobek test employed boiling nitric acid to improve the efficiency of the sulfide digestion. No change in the Sobek acid neutralizing potential method was used. The acid neutralizing potential for the net carbonate value static test is based on LECO carbon determined in raw samples and samples digested with hydrochloric acid to remove carbonate minerals. The acid neutralizing potential is therefore distinguishing carbonate minerals in all but the most altered rocks. The two methods (Sobek and net carbonate value) correlated very strongly with an r^2 value of 0.99.*

The acid neutralizing potential:acid generating potential ratios have been added to Section 3.2.2 of the FEIS for the waste rock material balance discussion. A kinetic test indicated that while samples with very low net neutralizing potential (<-20 kilograms per ton) might form acid, most samples in the range of net neutralizing potential between -20 and +20 kilograms per ton did not form acid. As a result, a net neutralizing potential value of 0 (neutralizing potential ratio=1) was utilized as the potentially acid generating cutoff. Use of different potentially acid generating criteria does not have a large effect on the calculated potentially acid generating abundance in BMM samples. Increasing the neutralizing potential ratio from 1.0 to 1.2 or 3.0 increases potentially acid generating abundance by 0.25% and 2.55%, respectively. If a net neutralizing potential of +20 kilograms per ton was used, the PAG abundance would increase from 3.26% (for net neutralizing potential=0) to 9.96%. Humidity cell tests suggest that a potentially acid generating cutoff of net neutralizing potential=0 is conservative because samples with negative net neutralizing potential did not become acid or release sulfate in kinetic tests.

Response No. Q-6: *Arsenic and antimony are not anticipated to have high mobility. The previous column analyses at the Little Bald Mountain Mine, arsenic, antimony, and mercury were sorbed onto soils located near the leach pad. Iron is not anticipated to leach since iron is relatively insoluble under oxidizing conditions with neutral to alkaline pH. The immobility of the iron also makes it an effective sorbent for arsenic and antimony. Under neutral-oxidizing conditions, iron oxide compounds will persist and provide attenuation capacity. Iron has been shown to be present in soils, sediments and bedrock underlying the rock disposal areas.*

While the whole rock analyses indicate elevated arsenic, antimony, and lead, it is important to remember that elemental abundance in whole rock assays seldom correlate well with soluble levels, which are highly dependent upon pH. The neutral to alkaline conditions occurring at Bald Mountain would reduce the mobility of these elements.

A detailed description of the mineralogy of the Bald Mountain area is provided in Shafer (2009). The BLM and Nevada Division of Environmental Protection both receive copies of waste rock analyses as part of the existing (and future) Water Pollution Control Permits to include acid base accounting, Meteoric Water Mobility Procedure and sulfur speciation test results.

The borehole sample locations are shown on Figures 2-3, 2-4, 2-5, and 2-6. Static and kinetic test results from previous Bald Mountain mining areas are representative for the FEIS because the proposed mine expansion areas are all within the same rock formations that have been mined previously. This is discussed and shown in Sections 2.3.3 and 2.3.4 of the FEIS. Reclamation and closure including closure monitoring, are described in Section 2.3.14 of the FEIS.

Response No. Q-7*: Samples from the 1980s were sampled for major ions and general chemistry. Metals were not analyzed at that time. The samples obtained in 1994, as part of the previous EIS in 1995, included metals analyses. All available sampling data has been included in the FEIS. Although there are no metals data from the 1980s, examination of the data presented in Table 3-1 shows no significant differences to concentrations of the major ions in the local springs.*

Response No. Q-8: *BMM plans the installation of additional monitoring wells to track groundwater quality throughout the life of the mine and post-closure period to determine the presence or absence of changes to the groundwater. There are eight additional groundwater monitoring locations proposed at this time. These locations include three near the Mooney Leach Pad, two near the toe of the Sage Rock Disposal Area, one near the toe of the East Sage Rock Disposal Area, and two at the toe of the North 1 Rock Disposal Area. The locations of these monitoring wells are shown on Figure 2-12 of the FEIS.*

The selection of Alternative A as the preferred alternative will result in a significant reduction in disturbance of the Cherry Spring recharge area. This reduction in disturbance is a result of using the waste rock planned for the Sage Flat Rock Disposal Area expansion for pit backfill. A discussion of this reduction in disturbance is provided in Section 3.2.2 of the FEIS and in Response O-2. The reduction of disturbance in the Cherry Spring recharge area is shown on Figure 3-3.

Best management practices for stormwater are addressed in the Stormwater Pollution Prevention Plan and the Stormwater General Permit NVR300000, State of Nevada, Division of Environmental Protection, General Permit for Stormwater Discharges Associated with Industrial Activity from Metals Mining Activities.

Response No. Q-9: *As described in the FEIS (Section 3.2.1), there are very few surface water resources within the proposed Plan of Operations boundaries. All drainages within the boundary are ephemeral and are shown on Figure 3-9. Figure 1-2 shows the topography of the project area in relation to the existing facilities. Figure 1-3 provides the topography of the project area in relation to the proposed operation. Figure 2-12 provides the topography of the project area in relation to the post-mining configuration. In addition to these figures, Figures 2-2 through 2-7 show detailed topography of each of the disturbance areas. From these figures, all ephemeral drainages can be identified in relation to current, proposed, and post-mining configurations.*

The only springs within the boundary are Cherry Spring, Mill Spring, and South Water Canyon Spring. These spring features are shown on Figures 3-2, 3-3, and 3-4. In addition, Figure 2-13 (post-mining topography) of the FEIS has been revised to show springs. Mill Spring and South Water Canyon Spring are shown on Figure 2-5 in the FEIS. Cherry Spring is the only one of the three springs that could potentially be impacted by the proposed operation. As discussed in Section 3.3.2 of the FEIS, the impact would be associated with disturbance to the recharge area. The existing and proposed operations (including Alternative A), in relation to Cherry Springs, is shown in detail on Figure 3-3. It should be noted that with implementation of Alternative A (BLM preferred alternative), the potential impacts would be reduced significantly as the BLM preferred alternative would disturbed 52.1 acres less than the Proposed Action in the Cherry Spring recharge area. This is discussed further in Response O-2.

The Stormwater Pollution Prevention Plan (SWPPP), Appendix E of the Plan of Operations, addresses run-on and run-off associated with the mine facilities. Figure 4 of the SWPPP identifies the locations of Best Management Practices for sediment and erosion control.

Response No. Q-10: *BMM is currently waiting for the Corps to issue the concurrence letter for the drainages associated with the proposed expansion. If this concurrence letter is received prior to issuance of the FEIS, the letter will be included.*

Response No. Q-11: *If the Corps does not concur, BMM must comply with all applicable federal regulations regarding dredge and fill material, and would be expected to modify the proposal or apply for and obtain any necessary permits.*

Response No. Q-12**:** *The FEIS states that 91 percent of the soils are characterized either as extremely stony, very gravelly, very cobbly, or very stony material. Also indicated in the FEIS, the soils that are characterized as extremely gravelly, stony or cobbly are not included in the calculation of salvageable growth medium. The Pioche soil type would be the only soil type eliminated from salvaging due to the extremely stony nature of the material. Table 3-8 in the FEIS indicates that most of the soils to be disturbed are rated as "Poor" for use as reclamation. However, this does not preclude the use of these materials as growth medium. These same soils currently support the vegetation that existed prior to disturbance. These same soils, which have been salvaged from the existing disturbance areas, are currently being used for concurrent reclamation.*

The reclamation plan does not require soil amendments. Successful reclamation, according to the Nevada Guidelines for Successful Revegetation, is not based on the type of soil but the success of revegetation. The reclamation plan requires that Barrick meet the requirements of

these guidelines. If revegetation is not successful with the salvaged soil, then amendments may be needed, but this would only occur if necessary to meet the requirements of these guidelines. Based on current stockpiled growth medium and estimated future stockpiling (7.3 to 11.7 million cubic yards), there will be sufficient growth medium to provide a 24-inch cover on the heap leach pad and a minimum of six inches of cover on the waste rock disposal areas and other disturbance. Reclamation monitoring at the BMM and other area mines has been conducted to identify the methods that achieve the best reclamation results as indicated in Section 2.3.13 of the FEIS. These monitoring efforts will continue to identify and improve techniques for successful reclamation. Barrick will implement appropriate reclamation methods to achieve the reclamation standards set forth by the BLM and Nevada Division of Environmental Protection.

Response No. Q-13: *The 24 inches of soil cover on the heap leach pad is provided as an evapo-transpiration cover to reduce infiltration into the heap leach pad; thus resulting in less drain down to be managed over the short- and long-term. During preparation of the Plan of Operations (Barrick 2009 as referenced in the FEIS) for the Proposed Action, several previous studies were reviewed. These studies are referenced in the Plan of Operations. These studies analyzed between 18 and 36 inches of cover on the leach pads. The studies indicated no additional benefit is realized beyond 24 inches of cover on the leach pads.*

Based on current reclamation monitoring at the BMM, the amount of cover material to be placed on the other disturbance (rock disposal area, roads, etc.) would be sufficient to meet the reclamation standards set forth by the BLM and Nevada Division of Environmental Protection. As the geochemistry in Chapter 3 of the FEIS indicates, there is no need to reduce infiltration through the rock disposal areas, therefore a cover thickness was determined to be sufficient to establish vegetation growth, similar to other disturbed areas on the mine site.

As discussed in Response Q-12, there would be sufficient growth medium resources to accommodate 24 inches of growth medium on the heap leach pads and a minimum of six inches of growth medium on other disturbance areas.

Response No. Q-14: *The FEIS states mercury reduction will occur under the proposed action. However, Barrick installed the mercury controls (listed in Table 3-21 of the FEIS) in January 2009 for existing operations; the Proposed Actions would use the same controls. The FEIS describes the current reductions and that the proposed action would realize the reductions immediately upon operation.*

Response No. Q-15: *Barrick already uses low-sulfur fuel for their existing operations and will continue to do so for the proposed action. Barrick also currently minimizes construction-related trips for both cost and efficiency reasons, through both bulk transport and detailed scheduling. All of Barrick's mobile equipment is newer and regularly maintained, to include tuning and appropriate emission controls to maintain specifications. At this time, it is not known whether Barrick intends to purchase vehicles with particulate traps.*

The FEIS has been revised to reflect Barrick's use of low-sulfur fuel, minimization of trips, use of newer equipment, and regular maintenance of vehicles. Trap control is not necessary to include in the FEIS because vehicles will be required to be certified to any Environmental Protection Agency transportation emission standards prior to being sold in the United States market. Traps will be included by vehicle manufacturers if necessary to meet diesel particulate matter standards.

Response No. Q-16: *The post-closure fluid monitoring, as indicated in the FEIS, is for monitoring after all closure activities have occurred, including fluid management of the heap leach facility. Therefore, if managing draindown solutions requires five years before solution can be managed through the use of evapotranspiration cells, the five-year post-closure monitoring would begin after that five-year period. This would result in 10 years of monitoring for that individual facility following cessation of mining or processing operations.*

Response No. Q-17*: The infiltration studies discussed in Section 2 of the FEIS are in relation to infiltration of meteoric precipitation through the cover of the heap leach pad system. The studies are prepared to assist with water balance calculations during closure and post-closure. References for these cover studies are provided in the Plan of Operations (Barrick, 2009).*

The information provided in the DEIS regarding previous closure of heap leach pads using vadose zone infiltration is misleading and has been removed from the FEIS. This information is misleading because the current closure plan of the BMM and Mooney Basin heap leach pads is for zero discharge with the implementation of either evapo-transpiration cells or evaporation cells.

Solution from both currently active heap leach pads would be managed through recirculation and active evaporation until draindown from the pads can be managed long-term through the use of evapo-transpiration cells as discussed in Section 2.3.14 of the FEIS. With the use of evapo-transpiration cells for managing long-term draindown of leach solution, no discharges would occur to the subsurface environment. Because there will be no planned discharge to the subsurface, a detailed description of the subsurface in the vicinity of the leach pads, including a discussion of the interactions of draindown solutions with the subsurface materials is not necessary.

Response No. Q-18: *Several existing permits require post-closure monitoring including the Water Pollution Control Permit and Reclamation Permit. At a minimum, the Water Pollution Control Permit requires five years of post-closure monitoring of groundwater and surface water. It is the responsibility of the operator to address issues that arise following closure of the mine.*

The reclamation permit also requires post-closure monitoring prior to release of the reclamation bond. Post-closure requirements under this permit include monitoring the stability of all reclaimed areas and monitoring for vegetation success as discussed further in Section 2.3.14 of the FEIS. If facilities become unstable during the post-closure monitoring period or do not meet the revegetation guideline requirements, the operator would be responsible for addressing these issues.

Waste rock characterization data indicates that exposure of waste rock to precipitation would not result in degradation of water resources. In addition, the bulk of draindown from the heap leach pads would be actively or passively evaporated prior to long-term management in a contained evapo-transpiration cell. Given that the risk of water resource degradation is a low, the most likely post-closure issues would be associated with erosion and revegetation success. If these issues are realized during post-closure monitoring, the operator would be responsible for mitigating these concerns. Mitigation for erosion issues could include regrading of areas and installation of additional best management practices.

Response No. Q-19: *It is not the BLM's policy to include the reclamation cost estimate for financial assurance in NEPA documents. The reclamation and closure plans, measures and techniques are presented in the FEIS to allow for public review and comment on their adequacy. Reclamation and closure costs are time-sensitive, which is why the BLM Authorized Officer has the authority to review and require cost updates at any time to ensure bond adequacy.*

The operator would be responsible for any post-closure clean-up actions, as indicated in the response to Q-18.

Response No. Q-20: *A description of the post-closure monitoring for the facilities is provided in the Water Pollution Control Permit and Reclamation Permit. The water pollution control permit provides for a minimum of five years of post-closure monitoring. Additional monitoring may be required at the discretion of Nevada Division of Environmental Protection, Bureau of Mining Regulation and Reclamation.*

Specific requirements of the BLM and Nevada Division of Environmental Protection during each phase of closure and reclamation will be met prior to release of any bond amount. As discussed in Response Q-18, the risk of water resource degradation is low during operation and following closure of the mine. Thus, post-closure activities would most likely include addressing stability issues and revegetation of the mine site. The BLM would retain a sufficient bond amount to address any post-closure stability issues and/or revegetation success issues. BLM also retained the authority to review and require cost updates at any time to assure bond adequacy. The operator would be responsible for addressing any post-closure issues before the bond would be released.

Response No. Q-21: *The BLM has selected Alternative A as the agency preferred alternative. In combining Alternative A with Alternative B, there would be a slight overall decrease in the quantity of surface disturbance over selecting only Alternative A. The actual reduction in disturbance acres by combining Alternatives A and B would only be 14 acres, since the majority of the required expansion needed at of the BMM heap leach pad to accommodate the additional ore would occur on undisturbed land, that has been previously authorized for disturbance Accordingly, the actual difference in the amount of disturbance would be negligible. However, to accommodate haulage of ore to the BMM leach pad, the haul distance to transport the ore would be longer resulting in additional fuel consumption, greater vehicle emissions, and more maintenance cost for vehicles.*

Response No. Q-22: *The use of conveyors was eliminated without further analysis for several reasons. The first is the majority of road disturbance for transport of ore has already occurred with the current authorized operations. To minimize additional disturbance, the conveyor system would be constructed on existing roads where possible. In addition, only 159 acres of the proposed 3,920 acres of disturbance are for new roads. The Proposed Action is primarily an expansion of existing facilities, since haul roads for ore and waste transport already exist to most of the facilities. From a disturbance standpoint, there would be very little benefit in using conveyors versus existing and proposed roads.*

Second, the mine currently transports and places run-of-mine ore on the leach pad for processing. Run-of-mine ore is material that goes directly from the pits to the leach pads without further size reduction from a crusher. Run-of-mine ore is typically too large to be transported on a conveyor system; as a result, a crusher would be required. Barrick would need

to install a centralized crusher prior to placement on a conveyor system. Electrical power use would increase significantly with the use of a crusher and ore haulage would still be required to transport the ore from the pits to the crusher.

Third, the use of a crusher and ore transfer points on the conveyor system would likely increase the fugitive dust emissions from the mine site. Additionally, energy consumption is likely to increase as a result of power needs for the crusher and the conveyor system. Although fuel consumption may be reduced as a result of a short haul, this would likely be offset by the electrical power use.

Response No. Q-23: *Figures 2-14 and 2-18 have been changed in the FEIS to clarify the changes in the leach pad under Alternative B.*

APPENDIX D

BLM Best Management Practices

1. Any change or amendment to your minerals operation must be brought to the attention of the Ely District Office Manager or an authorized officer prior to implementation of the change on the ground.

2. Cultural resource inventories will be conducted on all proposed areas of potential surface disturbing impacts, including appropriate buffer zones, prior to authorization of the mineral operations. Inventories will be completed by BLM or BLM-approved cultural resource permit holders.

3. A noxious weed survey will be completed prior to any earth disturbing activity including cross-country travel. Noxious or invasive weeds that may be located on the site will be managed according to methods to be approved by the Authorized Officer. Should chemical methods be approved, the lessee must submit a Pesticide Use Proposal to the Authorized Officer 60 days prior to the planned application date. A Pesticide Application Report must be submitted to the Authorized Officer by the end of each fiscal year following chemical application.

4. Existing access must be used whenever possible. Off-road vehicular travel shall be held to an absolute minimum necessary to complete operations. Additional roads, if needed, will be kept to an absolute minimum and the location of routes must be approved by the Authorized Officer prior to construction.

5. All survey monuments, claim markers, witness corners, reference monuments, bearing trees, etc., must be protected against destruction, obliteration or damage. When operations are concluded, the operator will remove all survey markers, stakes, flagging, etc., for which the operator has no further need.

6. Removal or alteration of existing improvements (fences, cattle guards, etc.) is not allowed without prior approval of the Authorized Officer. Existing improvements will be maintained in a serviceable and safe condition. Upon completion of operations, any authorized facility alterations will be restored to the specification of the Authorized Officer.

7. All vegetative clearing will be held to the minimum necessary to accommodate the planned operations.

8. No blasting will be permitted if it will be detrimental to the significant characteristics of archeological or historical values, recreation areas, known caves, water wells, or springs.

9. During periods of adverse conditions affecting soil moisture caused by climatic factors such as thawing, heavy rains, snow, flooding, or drought, all activities off existing maintained roads that create excessive surface rutting may be suspended. When adverse conditions exist, the operator will contact the Authorized Officer for an evaluation and decision based on soil types, soil moisture, slope, vegetation, and cover.

10. All trash, garbage, debris, and foreign matter must be removed and properly disposed. Site must be maintained and left in a clean and safe condition. Burning will not be allowed at the site.

11. No oil or lubricants will be drained onto the ground surface. Any spills less than 25 gallons will be immediately cleaned up; spills over 25 gallons will be reported to the Authorized Officer and NDEP.

12. All construction, operation, and maintenance activities will comply with all applicable Federal, State, and local laws and regulations regarding the use of hazardous substances and the protection of air and water quality.

13. The operator will work with the Authorized Officer on the containment of drilling fluids and drill hole cuttings. Mud, separation pits, and other containments used for the storage of any hazardous materials will be adequately fenced, posted, and/or covered.

14. Powder magazines will be located at least 0.25-mile from traveled roads. Loaded shot holes and charges will be attended at all times. Use of explosives will be according to applicable Federal and State regulations.

15. The operator will make every effort to prevent, control, or suppress any fire in the operating area. The operator may be required to have fire-fighting equipment available on-site while operations are in progress, depending on hazards inherent in the type of operation and fire hazard levels. Reports of uncontrolled fires will be relayed immediately to the Ely District Office Manager or Authorized Officer. The BLM Fire Dispatch telephone number is (775) 289-1925 or 1-800-633-6092. After working hours call 911 or the White Pine County Sheriff's Office at (775) 482-8101.

16. Lands containing unstable/highly erodible soils may require additional protective measures such as restrictions on surface entry during periods of excessive runoff, avoidance of selected areas, and special reclamation techniques.

17. All decisions issued by the Ely District Office will have a Needs Assessment completed in accordance with the Nevada BLM and SHPO Protocol.

18. Documentation (photos, drawings, etc.) will be collected on all sites eligible for the National Register of Historic Places. This will allow tracking of human and natural caused deterioration.

19. If cultural resources (historic or archaeological materials) are discovered during construction, the operator is to immediately stop work, protect such materials, and contact the Authorized Officer. Within five working days, the Authorized Officer will inform the operator as to:

    a. The appropriate treatment measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible);

    b. A timeframe for the Authorized Officer to complete an expedited review and necessary consultation;
    c. The operator's responsibility for treatment costs; and

d. Technical and procedural guidelines for the conduct of the treatment. Upon verification from the Authorized Officer that the required treatment has been completed, the operator will then be allowed to resume construction.

20. All identified cultural resources will be avoided by project-related activities per the Nevada BLM standards for cultural resources. If avoidance is not feasible, mineral activities must cease until mitigating measures or treatments are developed and implemented and Section 106 consultation is completed. Archaeological monitors may be required in special cases.

21. The operator is responsible for informing all persons associated with the project that knowingly disturbing cultural resources (historic or archaeological) or collecting artifacts is illegal.

22. During winter operations, requirements for cultural resource inventories may be waived by the Authorized Officer if the unsurveyed areas are located on bare and frozen ground or are completely covered (100%) by snow and the snow is sufficiently deep (approximately 4 to 6 inches) to prevent ground disturbing ruts. Should conditions change while operations are in progress, additional considerations may be necessary. The operator must contact the Authorized Officer to determine if an archaeological monitor or an inventory may be required prior to continuance of mineral activities.

23. Any activity planned within the viewshed of the Pony Express National Historic Trail or other National Landscape Conservation System (NLCS) properties, listed National Register Districts, or properties eligible under criterion A, must undergo a visual assessment. Appropriate mitigation of visual impacts will be implemented as necessary to keep the setting of the management corridor in as natural a condition as possible. Special reclamation measures may be required to restore the setting to its natural condition.

24. Under no circumstances will wild horses, burros, wildlife, or livestock be willfully harassed. When traveling roads, all livestock gates will be closed after use.

25. To protect wildlife and wild horses, perimeter fences will be flagged every 16 feet with white flagging. Flagging should be at least one inch wide and with at least 12 inches hanging free from the top wire of the fence. Fences will also avoid obvious horse migration routes (deep trails, stud piles) if at all possible.

26. If the project involves heavy or sustained traffic, road signs for safety and protection of wild horses and wildlife will be required.

27. Any new disturbance commencing between April 15 and July 15 must first be surveyed for nesting migratory birds. If nests are found, the project may be moved or delayed until July 15.

28. Any identified bald eagle roost sites, peregrine falcon back sites, and occupied raptor aeries (nests) will be avoided during mineral operations. A 0.5-mile buffer zone will be imposed on all activities around occupied nests.

29. Actions, which will adversely impact a special status species (including federally listed, proposed, and candidate species, state-protected species, and BLM sensitive species or its

habitat) will be modified in order to prevent possible future listing of these species as threatened or endangered. The following restrictions apply to the following species:

a. Sage Grouse. No surface disturbance will be allowed within an active sage grouse lek. No surface use will be allowed within ½ mile of an active sage grouse lek from midnight until 10 a.m. during the period March 15 through May 31.

b. Ferruginous Hawk. Ferruginous Hawk nest sites will not be disturbed. No surface use will be allowed within ½ mile of an occupied Ferruginous Hawk nest during the period March 1 through June 30 or until the birds have fledged (left) the nest.

c. Mule Deer Habitat SOP. Within the Ely District, there are identified mule deer key habitats (key habitats include habitats such as crucial habitats. These habitats are essential to populations of big game. If elements of these habitats are compromised, the results could be detrimental to the population); therefore, prior to entry onto the land, the operator will discuss the proposed activity with the appropriate BLM Authorized Officer. Additional measures may be required for the protection of the deer and their habitat which may include:

i. Limitation on surface use during the period of crucial deer use.
ii. Minimizing disturbance to habitat and forage.

d. Pygmy Rabbit SOP. Within the Ely District there are favorable habitats selected by pygmy rabbits as burrowing areas. Therefore, prior to entry into these areas the operator will discuss the proposed activities with the BLM's Authorized Officer who may require additional measures for the protection of pygmy rabbits and their habitat. Such measures may include:

i. Avoidance of selected areas.
ii. Restriction of activities near burrows during the months of April through June.

30. To eliminate the transport of vehicle-borne weed seeds, roots, or rhizomes, all vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of ground disturbing activities; for emergency fire suppression; or for authorized off-road driving will be free of soil and debris capable of transporting weed propagules. All such vehicles and equipment will be cleaned with power or high pressure equipment prior to entering or leaving the work site or project area. Vehicles used for emergency fire suppression will be cleaned as a part of check-in and demobilization procedures. Cleaning efforts will concentrate on tracks, feet or tires, and on the undercarriage. Special emphasis will be applied to axles, frames, cross members, motor mounts, on and underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out and refuse will be disposed of in waste receptacles. Cleaning sites will be recorded using GPS or other mutually acceptable equipment and provided to the BLM Weed Coordinator or designated contact person.

31. Prior to the entry of vehicles and equipment to a project area, areas of concern will be identified and flagged in the field by a weed scientist or qualified biologist. The flagging will alert personnel or participants to avoid areas of concern.

32. Prior to entering public lands, the Contractor, Operator, or permit holder will provide information and training regarding noxious weed management and identification to all personnel who will be affiliated with the implementation and maintenance phases of the

project. The importance of preventing the spread of weeds to uninfested areas and the importance of controlling existing populations of weeds will be explained.

33. To eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes, infested soils or materials will not be moved and redistributed on weed-free or relatively weed-free areas. In areas where infestations are identified or noted and infested soils, rock, or overburden must be moved, these materials will be salvaged and stockpiles adjacent to the area from which they were stripped. Appropriate measures will be taken to minimize wind and water erosion of these stockpiles. During reclamation, the materials will be returned to the area from which they were stripped.

34. Prior to project approval, a site specific weed survey will occur and a Weed Risk Assessment will be completed. Monitoring will be conducted for a period no shorter than the life of the permit or until bond release and monitoring reports will be provided to the BLM. If the spread of noxious weeds is noted, appropriate weed control procedures will be determined in consultation with BLM personnel and will be in compliance with the appropriate BLM Handbook sections and applicable laws and regulations. All weed control efforts on BLM lands will be in compliance with BLM Handbook H-9011, H-9011-1 Chemical Pest Control, H-9014 Use of Biological Control Agents of Pests on Public Lands, and H-9015 Integrated Pest Management. Submission of Pesticide Use Proposals (PUPs) and Pesticide Application Records (PARs) will be required.

35. All vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of ground disturbing activities; for emergency fire suppression; or for authorized off-road driving that are used to drive through, mow, harvest, scrape, or otherwise contact plant species listed on the Nevada Noxious Weed list or specifically identified by the Ely District Office will be cleaned prior to continued use in weed free areas. Cleaning requirements are described in SOP#1.2.5.4.

36. For mineral activity, retain bonds for weed control until the site is returned to desired vegetative conditions.

37. To provide for effective rehabilitation of the disturbed area, all available growth medium, as practical, will be removed and stockpiled. Any trees removed will be separated from soils and stockpiled separately.

38. Topsoil stockpiles and road berms, if scheduled to be left in place over the growing season, will be seeded with an approved site-specific interim seed mix to reduce erosion, preserve the biological flora and fauna, and prevent the establishment of noxious weeds and other undesirable plant species.

39. The operator shall reclaim the disturbed area concurrently or at the earliest feasible time by recontouring to conform with pre-existing topography (including filling of trenches), to the extent possible, followed by redistribution of stockpiled topsoil over the reclaimed area. Compacted areas will be ripped to a depth of 12 inches unless in solid rock. Ripped areas may need further work to break up large clods and produce a fine-grained seed bed.

40. Site preparation for reclamation may include contour furrowing, terracing, reduction of steep cut and fill slopes, and the installation of water bars, etc.

41. Reseeding may be required, in which case a site-specific seed mixture will be recommended by the operator and approved by the Authorized Officer. Seeding is recommended only between October 1 and March 15 for the northern part of the District, and November 1 through March 1 for the southern part of the District.

42. Reclamation will normally be accomplished with native seeds only. These will be representative of the indigenous species present in the adjacent habitat. Rationale for potential seeding with selected non-natives must be documented. Possible exceptions could include use of non-natives for a temporary cover crop to out-compete weeds. Where large acreages are burned by the fires and seeding is required for erosion control, all native species can be cost prohibitive and/or unavailable. In all cases, seed mixes will be approved by the Authorized Officer prior to planting.

43. All interim and final seed mixes, hay, straw, and hay/straw products must be tested for noxious weeds and certified free of plant species listed on the Nevada Noxious Weed list.

44. All drill holes must be plugged per Nevada State statute (Division of Water Resources "Regulations for Water Well and Related Drilling") as wavered. If artesian flow is encountered, the drill hole must be plugged immediately. The location, depth, and relative flow rate of any water intercepted shall be reported to the Ely District Office Manager or the Authorized Officer. Drill cuttings will be returned to the hole of possible, or at a minimum, raked and spread out so as not to impede regrowth of vegetation or to create erosion problems.

45. The Ely District Office Manager or the Authorized Officer will be notified within 5 days of completion of reclamation work so that timely compliance inspections can be completed.

46. The area is considered to be satisfactorily reclaimed when all disturbed areas have been recontoured to blend with the natural topography, erosion has been stabilized, and an acceptable vegetative cover has been established. The Nevada Guidelines for Successful Revegetation for the Nevada Division of Environmental Protection, the Bureau of Land Management, and the U.S.D.A. Forest Service (or most current revision or replacement of this document) will be used to determine if revegetation is successful.

47. In areas of known noxious weed infestations, monitoring of noxious weed will be conducted on an annual basis. Monitoring will be conducted until project release. If the spread of noxious weeds is noted, the infested areas will be further evaluated to determine the appropriate remedial action and appropriate treatment. Appropriate weed control procedures, including target species, timing of control, and method of control, will be determined in consultation with BLM personnel.

48. No noxious weeds will be allowed on the site for reclamation release. Any noxious weeds that become established will be controlled.

APPENDIX E

Recent Waste Rock Analytical Data

MWMP Tests for Bida Pits

Station Name		BIDA	Mooney-Bida Waste- Intrusive	Mooney-Bida Waste- Intrusive	Mooney-Bida Waste- Sedimentary	Mooney-Bida Waste- Sedimentary	Mooney-Bida Waste- Intrusive	Mooney-Bida Waste- Sedimentary	Bida 2 Waste Facility	Bida 2 Waste Facility	Bida 3 Waste Facility	Bida 3 Waste Facility
Stn.Code		BIDA	BWF_Int_OX	BWF_Int_OX	BWF_Sed_OX	BWF_Sed_OX	BWF_Int_OX	BWF_Sed_OX	B2WF_Int_OX	B2WF_Sed_OX	B3WF_Int_OX	B3WF_Sed_OX
Sampling Session		3rd Qtr. 2005	3rd Qtr. 2006	4th Qtr. 2006	3rd Qtr. 2006	4th Qtr. 2006	1st Qtr. 2007	1st Qtr. 2007	4th Qtr. 2008	4th Qtr. 2008	4th Qtr. 2008	4th Qtr. 2008
Collect Date/Time		9/30/05	10/3/06	12/28/06	10/3/06	12/28/06	3/16/07	3/16/07	12/3/08	12/3/08	12/3/08	12/3/08
Lab Name		ELI	ELI	ELI	ELI	ELI	SVL	SVL	SVL	SVL	SVL	SVL
Sampled By		KN	Nick	Nick	Nick	Nick	Ore Control	Ore Control	Nick	Nick	Nick	Nick
Lab Test Date	Units	38625	38993	39079	38993	39079	39157	39157	39785	39785	39785	39785
Lab Reference Number		C05100169-002A	C06100322-004	E556614	C06100322-005	E556615	E565819	E565823	W8L0154-05	W8L0154-06	W8L0154-03	W8L0154-04
MWMP Extraction												
Alkalinity, Total	mg/L as CaCO3	60	36	58.6	58	77.8	20.9	26.2	38	56.8	15.9	84.1
Alkalinity, Bicarbonate	mg/L as CaCO3	73	44	58.6	69	77.8	20.9	26.2	38	56.8	15.9	84.1
Aluminum	mg/L	0.04	0.07	<0.080	0.18	<0.080	<0.080	<0.080	7.06	1.69	<0.080	0.537
Antimony	mg/L	0.01	0.002	0.0144	0.014	0.0116	<0.0030	<0.0030	0.263	0.0327	0.0441	0.00413
Arsenic	mg/L	0.043	0.017	0.071	0.004	0.032	0.0135	0.0144	0.0289	0.00606	0.00451	0.0119
Barium	mg/L	0.088	0.199	0.192	0.1	0.182	0.111	0.0974	0.387	0.142	0.0414	0.185
Beryllium	mg/L	ND	ND	<0.0020	ND	<0.0020	<0.0020	<0.0020	<0.00200	<0.00200	<0.00200	<0.00200
Bismuth	mg/L	ND		<0.06		<0.06						
Boron	mg/L	0.12	0.3	0.05	ND	0.06	0.19	0.22	0.159	0.098	0.073	0.109
Cadmium	mg/L	ND	0.003	<0.0020	ND	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Calcium	mg/L											
Chloride	mg/L	6	311	2.35	9	3.52	0.49	0.48	1.46	1.79	1.05	7.18
Chromium	mg/L	ND	ND	<0.0060	0.003	0.01	<0.0060	<0.0060	0.0076	<0.0060	<0.0060	<0.0060
Cobalt	mg/L	ND		<0.006		<0.006						
Copper	mg/L	0.006	1.61	<0.010	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cyanide (WAD)	mg/L	ND	ND	<0.010	ND	<0.010	<0.010	<0.010				
Fluoride	mg/L	0.8	0.3	0.43	0.4	0.41	0.25	0.47	0.754	0.56	0.165	0.639
Gallium	mg/L	0.003		<0.020		<0.020						
Iron	mg/L	ND	0.04	<0.06	ND	<0.06	<0.06	<0.06	2.23	0.297	<0.060	0.132
Lead	mg/L	ND	0.347	<0.0075	0.003	<0.0075	<0.0075	<0.0075	<0.00300	<0.00300	<0.00300	<0.00300
Lithium	mg/L	0.008		<0.020		<0.020						
Magnesium	mg/L	2.9	68	2.84	2	4.33	0.74	1.01	3.4	5.27	5.85	2.73
Manganese	mg/L	ND	0.059	<0.004	0.004	<0.004	<0.004	<0.004	0.0298	0.0218	0.0319	<0.0040
Mercury	mg/L	ND	ND	<0.00020	0.0228	0.00189	<0.00020	<0.00020	0.079	0.092	0.00962	<0.00020
Molybdenum	mg/L	0.004		<0.008		0.016						
Nickel	mg/L	ND	0.104	<0.010	ND	<0.010	<0.010	<0.010	0.01	<0.010	<0.010	<0.010
Nitrate + Nitrite as N	mg/L											
Nitrate as N	mg/L	2.6	43.6	0.439	0.6	0.92	0.289	0.7				
Nitrite as N	mg/L								1.25	7.28	4.22	4.75
pH (s.u.)	SU	8.22	7.56	7.34	8.36	7.56	6.96	6.69	7.68	7.87	7.08	7.98
Phosphorus	mg/L	ND		<0.05		<0.05						
Potassium	mg/L	5.2	23	11.6	3	4.37	0.59	1.7	14	18.1	25.4	4.01
Scandium	mg/L											
Selenium	mg/L	ND	0.005	<0.04	ND	<0.04	<0.0030	<0.0030	<0.00300	<0.00300	<0.00300	<0.00300
Silver	mg/L	0.003	ND	<0.0050	ND	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium	mg/L	22.5	17	4.37	5	10.2	3.92	4.86	9.36	6.59	8.26	19.7
Strontium	mg/L	0.093		0.085		0.094						
Sulfate	mg/L	43	53	20.7	36	21.7	4.37	11.5	34.2	38.4	127	23.7
Thallium	mg/L	ND	0.0054	<0.0020	ND	0.0022	<0.00200	<0.00200	0.00392	0.00349	0.00721	<0.00100
Tin	mg/L	0.001		<0.05		<0.05						
Titanium	mg/L	ND		<0.0050		<0.0050						
Total Dissolved Solids	mg/L	1.07	838		121							
Vanadium	mg/L	ND		<0.0050		<0.0050						
Zinc	mg/L	0.06	12.7	<0.010	0.01	<0.010	<0.010	<0.010	0.023	0.0132	<0.0100	<0.0100
Acid Base Accounting												
Paste pH (s.u.)												
AGP (tons CaCO3/kton)		17	<0.3	4.1	<0.3	<0.3	16.3	2.8	1.31	1.28	12.3	0
ANP (tons CaCO3/kton)		1	5	<0.3	2	517	1.5	1.5	2	2	1.5	627
NNP (tons CaCO3/kton)		-16	-5	-4.1	-89	517	-14.7	-1.3	0.69	0.72	-10.8	627

MWMP Tests for Top Pit

Sample Location		Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit
Reporting Period		1992	2nd Quarter 1995	3rd Quarter 1995	4th Quarter 1995	1st Quarter 1996	2nd Quarter 1996	3rd Quarter 1996	Fouth Quarter 1996	1st Quarter 1997	4th Quarter 1997	1st Quarter 1998	3rd Quarter 1998
Sample Date		1/9/1991	6/14/1995	8/31/1995	12/12/1995	1/4/1996	6/4/1996	8/7/1996	12-04-96	Mar-97	11-18-97	03-09-98	10-09-98
Received Date		1/3/1991	6/14/1995	--	--	--	--	--	--	--	--	--	--
Lab Name		Monitor	WestChem	--	--	West Chem	West Chem	Chemtech	Barringer	AAL	Barringer	Barringer	Barringer
Report Date		2/11/1991	7/10/1995	--	--	7/10/1996	--	--	--	--	--	--	--
Lab ID		1706	95-A001261	95-A002411	95-A003470	96-A001424	--	--	964104-7	--	974205-2	C0042	983449-1
Job ID	Units	--	--	--	--	--	--	--	964104E	EV2816	974205E	981611e	983449E
Source		--	--	--	--	Top	Top	Top	Top	Top	Top	Top	Top
MWMP Extraction													
Alkalinity, Total	mg/L as CaCO3	58	78.4	132	79.6	79	88	62	--	59	47	54	60
Alkalinity, Bicarbonate	mg/L as CaCO3	--	78.4	132	79.6	--	88	--	--	--	--	--	--
Aluminum	mg/L	<0.05	<0.2	0.265	0.147	0.04	0.01	<0.1	<0.05	0.093	<0.05	<0.02	<0.02
Antimony	mg/L	<0.05	<0.2	0.047	<0.02	<0.08	0.029	0.024	<0.006	0.012	<0.003	0.012	0.005
Arsenic	mg/L	0.047	<0.1	<0.1	0.055	0.035	0.091	0.27	0.28	0.094	0.048	0.169	0.11
Barium	mg/L	0.269	0.0	0.069	0.1	0.04	0.05	0.2	0.36	0.131	0.29	0.14	0.25
Beryllium	mg/L	<0.001	<0.005	<0.005	<0.002	<0.001	<0.0002	<0.1	<0.004	<0.002	<0.002	<0.002	<0.002
Bismuth	mg/L	<0.1	<0.035	<0.035	<0.011	<0.2	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	mg/L	0.168	--	--	--	--	--	--	--	--	--	--	0.2
Cadmium	mg/L	<0.007	<0.005	<0.005	<0.002	<0.005	<0.001	<0.001	<0.005	<0.002	<0.002	<0.002	<0.002
Calcium	mg/L	18.1	21.4	27.5	24.4	17.5	20	22	21.1	17.6	21.6	18.4	16.7
Chloride	mg/L	<0.01	<1.5	15.7	2.59	2	<1	2	<0.01	3.74	13	<4	5
Chromium	mg/L	<0.01	<0.01	<0.01	<0.003	<0.005	0.001	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	mg/L	<0.007	<0.005	<0.005	0.001	<0.01	<0.002	<0.1	<0.01	<0.02	<0.01	<0.01	<0.01
Copper	mg/L	<0.007	0.006	0.015	0.028	0.1	0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.02
Cyanide (WAD)	mg/L	0.021	--	<0.005	--	--	--	--	0.01	<0.005	0.01	0.01	<0.01
Fluoride	mg/L	0.833	0.729	1.18	0.9	<0.5	<0.5	0.2	0.4	0.72	0.5	0.8	1
Gallium	mg/L	<0.02	<0.1	<0.1	<0.006	<0.05	<0.01	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05
Iron	mg/L	0.011	0.2	<0.05	0.229	0.03	0.01	<0.1	<0.05	0.026	<0.1	<0.05	<0.05
Lead	mg/L	0.086	<0.03	<0.03	<0.01	<0.005	<0.005	<0.005	239.2	0.013	<0.003	<0.002	<0.002
Lithium	mg/L	0.014	<0.005	0.016	0.009	<0.01	0.006	<0.1	<0.04	<0.05	<0.02	<0.01	<0.01
Magnesium	mg/L	1.2	2.49	12	7.01	10.5	7.55	9	3.30	4.22	4.60	3.74	2.97
Manganese	mg/L	<0.003	0.006	<0.005	0.015	0.01	<0.002	<0.1	<0.005	<0.01	<0.005	<0.005	<0.005
Mercury	mg/L	<0.0005	0.0016	0.0062	0.037	0.02	0.027	0.0012	0.0252	<0.0002	0.0037	0.03	0.0033
Molybdenum	mg/L	0.028	0.021	0.022	0.025	<0.02	0.009	<0.1	0.010	0.019	0.010	<0.01	0.030
Nickel	mg/L	<0.015	<0.015	<0.015	<0.006	<0.01	<0.002	<0.1	<0.04	<0.02	<0.04	<0.04	<0.04
Nitrate + Nitrite as N	mg/L	--	2.189	5.07	3.75	6.5	1.3	6.39	4.7	6.7	4.2	4.9	1.71
Nitrate as N	mg/L	2.17	--	--	--	--	--	--	--	--	--	--	--
Nitrite as N	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
pH (s.u.)	SU	7.8	8.05	8.22	8.13	8.23	8.06	8.43	7.86	7.42	7.64	7.24	7.5
Phosphorous	mg/L	0.002	0.053	0.097	0.068	0.05	0.05	<0.1	<0.1	<0.02	<0.05	<0.05	<0.05
Potassium	mg/L	5.67	2.32	2.16	3.28	2.5	2.95	4	<5	2.66	<5	3	2
Scandium	mg/L	<0.02	<0.01	<0.01	<0.001	<0.002	<0.005	<0.1	<0.002	<0.05	<0.005	<0.005	<0.005
Selenium	mg/L	<0.005	<0.1	<0.1	<0.04	<0.02	<0.002	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	<0.02	<0.01	<0.01	<0.01	<0.005	<0.002	<0.002	<0.01	<0.01	<0.01	<0.01	<0.01
Sodium	mg/L	9.75	5.77	49	12.5	6.4	6.5	5.7	7	4.61	8	5	15
Strontium	mg/L	0.048	0.039	0.095	0.049	0.04	0.042	<0.1	0.051	0.062	0.052	0.08	0.059
Sulfate	mg/L	1.4	3.76	55.7	15.5	6	6	13	7	6.39	9	<5	8
Thallium	mg/L	<0.15	<0.1	<0.002	<0.002	0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001
Thorium	mg/L	<0.05	--	--	--	--	--	--	--	--	--	--	--
Tin	mg/L	<1.30	<0.1	<0.1	<0.1	<0.1	<0.02	<0.1	<0.03	0.200	<0.03	<0.03	<0.03
Titanium	mg/L	<0.001	<0.005	<0.005	<0.005	<0.01	<0.002	<0.1	<0.01	<0.05	<0.01	<0.01	<0.01
Total Dissolved Solids	mg/L	117	118	307	155	132	50	154	80	100	100	122	118
Uranium	mg/L	2	--	--	--	--	--	--	--	--	--	--	--
Vanadium	mg/L	<0.007	<0.007	0.009	<0.007	<0.01	0.002	<0.1	<0.01	<0.05	<0.01	<0.01	<0.01
Zinc	mg/L	0.021	<0.005	<0.005	0.0	<0.01	<0.002	<0.1	<0.02	<0.02	0.02	<0.02	0.02
Acid Base Accounting													
Paste pH (s.u.)		--	8.35	8.76	8.77	--	9.27	8.87	--	--	--	--	--
AGP (tons CaCO3/kTon material)		0.51	2.03	1.94	1.31	--	1.62	1.94	2.5	0.31	1.1	2.4	2.5
ANP (tons CaCO3/kTon material)		25.3	427	429	434	--	504	631	98	432	171	84	76
NNP (tons CaCO3/kTon material)		24.8	425.0	427.1	432.7	--	502.4	629.1	95.5	432	169.9	81.6	73.5
Total Sulfur (wt%)		--	--	--	--	--	--	--	--	0.04	--	0.077	--

MWMP Tests for Top Pit (continued)

Sample Location	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit
Reporting Period	1st Quarter 1999	2nd Quarter 1999	3rd Quarter 1999	4th Quarter 1999	1st Quarter 2000	2nd Quarter 2000	3rd Quarter 2000	4th Quarter 2000	1st Quarter 2001	2nd Quarter 2001	3rd Quarter 2001	4th Quarter 2001	1st Quarter 2001
Sample Date	3/2/1999	6/22/1999	8/31/1999	11/1/1999	--	6/4/2000	8/16/2000	11/21/2000	3/1/2001	6/20/2001	9/27/2001	12/31/2001	4/3/2002
Received Date	--	--	--	--	3/6/2000	6/7/2000	8/21/2000	11/27/2000	3/5/2001	6/25/2001	10/2/2001	1/4/2002	4/8/2002
Lab Name	Barringer	Barringer	Barringer	Barringer	SVL	SVL	SVL	SVL	SVL	SVL	SVL	SVL	SVL
Report Date	--	--	--	--	3/17/2000	6/21/2000	9/5/2000	12/11/2000	3/20/2001	7/10/2001	10/16/2001	1/21/2002	4/22/2002
Lab ID	C0042	992239-1	C0042	C0042	E228257	E234753	E241837	249831	E256917	E268383	278855	287514	E294349
Job ID	991544-14	992239E	9909095-1A	9912090	93799	94585	95320	96244	97072	98342	99473	100468	101268
Source	Top	Top	Top	Top	Top	Top	Top	Top	Top	Top	Top	Top	Top
MWMP Extraction													
Alkalinity, Total	25	21	21	34	39.1	32.1	24.4	41.2	50.9	58.7	58.3	100	72
Alkalinity, Bicarbonate	--	--	--	--	39.1	32.1	24.4	41.2	50.9	58.7	58.3	100	72
Aluminum	0.04	0.07	0.10	0.04	0.033	0.058	<0.024	<0.02	<0.02	<0.02	<0.02	0.02	<0.02
Antimony	<0.003	<0.003	<0.003	0.00	<0.002	0.004	<0.002	0.023	0.009	0.029	0.007	0.049	0.009
Arsenic	0.007	0.009	0.084	#N/A	0.022	0.055	<0.04	0.16	0.1	0.1	0.32	0.06	0.26
Barium	0.02	<0.02	0.007	0.430	0.061	0.074	0.025	0.099	0.113	0.221	0.2	0.259	0.212
Beryllium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth	<0.05	<0.05	<0.05	<0.05	0.024	<0.024	<0.044	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Boron	--	<0.1	--	--	0.066	0.045	0.054	0.13	0.1	0.09	0.12	0.1	0.13
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.0024	<0.0024	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Calcium	8.3	6.2	1.60	8.50	12.2	11.1	7.51	20.9	16.7	26.8	18.8	42.9	23.5
Chloride	< 4	<4	< 4	< 4	0.4	1.6	0.8	3.8	2.5	6.5	4.1	1.9	4.4
Chromium	<0.01	<0.01	<0.01	<0.01	<0.005	<0.005	<0.006	<0.006	<0.006	0.007	<0.006	<0.006	<0.006
Cobalt	<0.01	<0.01	<0.01	<0.01	<0.005	<0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Copper	<0.01	<0.01	<0.01	<0.01	<0.003	<0.003	<0.003	0.012	<0.003	<0.003	<0.003	<0.003	<0.003
Cyanide (WAD)	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Fluoride	<0.1	<0.1	0.25	0.17	<0.1	0.2	<0.1	0.4	0.3	0.4	0.4	0.2	0.2
Gallium	<0.05	<0.05	<0.05	<0.05	<0.022	<0.022	<0.022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Iron	<0.05	<0.1	<0.05	<0.05	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Lead	0.003	0.003	0.003	0.003	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Lithium	<0.01	<0.01	<0.01	<0.01	0.004	<0.003	<0.004	0.005	0.006	0.016	0.006	0.033	0.008
Magnesium	0.40	0.38	0.40	0.82	1.2	1.88	0.94	4.96	2.85	3.5	3.17	5.47	4.93
Manganese	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.007	<0.002
Mercury	0.0006	<0.0002	0.0039	0.0012	0.0008	0.0058	0.002	0.0005	0.002	<0.0002	0.014	0.0005	0.0142
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.008	0.009	<0.008	0.107	0.014	0.044	0.017	0.061	0.015
Nickel	<0.04	<0.04	<0.04	<0.04	<0.023	<0.023	<0.024	<0.005	<0.005	<0.01	<0.01	<0.01	<0.01
Nitrate + Nitrite as N	1.21	0.31	0.29	0.20	--	--	0.46	--	1.2	4.12	2.06	1	1.7
Nitrate as N	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite as N	--	--	--	--	--	--	--	--	--	--	--	--	--
pH (s.u.)	7.77	6.82	7.34	7.37	7.75	7.98	7.73	6.87	7.78	8.08	7.94	8.04	8.04
Phosphorous	<0.05	<0.05	0.08	0.11	<0.074	<0.074	<0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Potassium	< 1	<1	< 1	< 1	<1.7	<1.7	<1.7	2.8	2.3	6.2	3.2	5.6	3.3
Scandium	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	<0.01	<0.01	<0.01	<0.01	<0.006	<0.006	<0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Sodium	< 5	2	3.80	5.10	1.77	1.27	1.62	5.6	3.7	4.2	4.9	6.4	4.9
Strontium	0.009	0.007	0.01	0.03	0.026	0.043	0.013	0.064	0.053	0.104	0.054	0.16	0.054
Sulfate	< 5	<5	24.00	< 5	0.8	3.4	0.5	41	6.5	15.4	4.1	37.2	14.3
Thallium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001
Thorium	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	<0.05	<0.03	0.01	<0.05	<0.05	<0.05	<0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	<0.01	<0.01	<0.01	<0.01	<0.007	<0.007	<0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Dissolved Solids	20	21	48	59	34	44	37	111	88	151	100	188	120
Uranium	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	<0.01	<0.01	<0.01	<0.01	<0.005	<0.005	<0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	<0.02	<0.02	<0.02	<0.02	<0.003	<0.003	<0.003	<0.005	<0.005	<0.005	<0.005	0.005	0.006
Acid Base Accounting													
Paste pH (s.u.)	--	--	--	--	--	--	--	--	--	--	--	--	--
AGP (tons CaCO3/kTon material)	0.9	--	0.90	0.90	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.3	12.8	0.6
ANP (tons CaCO3/kTon material)	34	--	14	43	748	443	818	471	553	505	323	359	190
NNP (tons CaCO3/kTon material)	33.1	--	13.1	42.1	748	443	818	471	553	505	323	346	190
Total Sulfur (wt%)	--	--	--	--	--	--	--	--	--	--	--	--	--

Baseline Geochemical Assessment

Bald Mountan North Area Expansion

MWMP Tests for Top Pit (continued)

Sample Location	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit	Top Pit
Reporting Period	2nd Quarter 2002	3rd Quarter 2002	4th Quarter 2002	1st Quarter 2003	2nd Quarter 2003	3rd Quarter 2003
Sample Date	7/18/2002	9/17/2002	12/23/2002	3/31/2003	6/26/2003	9/30/2003
Received Date	7/24/2002	9/20/2002	12/26/2002	3/31/2003	--	10/7/2003
Lab Name	SVL	SVL	SVL	AAL	SEM	SEM
Report Date	8/8/2002	10/3/2002	1/10/2003	4/28/2003	7/15/2003	10/22/2003
Lab ID	E304921	E311302	E320814	NV00040	S200306-1530	S200310-0398
Job ID	102471	103271	104493	EV7155	54212	56314
Source	Top	Top	Sage Flats	Sage Flats	Sage Flats	--
MWMP Extraction						
Alkalinity, Total	50.9	31.2	81.1	89	<1	<1
Alkalinity, Bicarbonate	50.9	9.4	81.1	0	74	71
Aluminum	<0.2	0.09	<0.020	<0.02	<0.05	<0.05
Antimony	<0.01	0.016	0.0075	0.009	0.019	0.005
Arsenic	0.37	0.54	0.062	0.393	0.14	0.056
Barium	0.202	0.097	0.0403	1.34	0.21	0.038
Beryllium	<0.002	<0.002	<0.0020	<0.002	<0.002	<0.002
Bismuth	<0.2	<0.02	<0.020	<0.02	<0.05	<0.05
Boron	0.1	0.13	0.186	<0.1	<0.05	0.13
Cadmium	<0.002	<0.002	<0.0020	0.0034	<0.002	<0.002
Calcium	15.1	17.1	24.4	103	20	9.7
Chloride	1.1	1.4	1.93	220.0	1.4	8.6
Chromium	0.007	<0.006	<0.0060	0.038	<0.002	0.003
Cobalt	<0.006	<0.006	<0.0060	<0.02	<0.002	<0.002
Copper	<0.003	<0.003	0.0088	0.074	0.061	0.053
Cyanide (WAD)	<0.01	<0.01	<0.010	0.011	0.01	<0.005
Fluoride	0.4	0.1	0.27	0.56	0.19	0.3
Gallium	<0.02	<0.02	<0.020	<0.05	<0.1	<0.1
Iron	<0.02	<0.02	<0.020	<0.02	<0.1	<0.05
Lead	<0.005	<0.005	<0.0050	0.011	<0.002	<0.002
Lithium	0.005	<0.004	<0.0040	0.130	<0.1	<0.1
Magnesium	3.11	1.27	4.41	13	4.5	3.3
Manganese	<0.002	<0.002	<0.0020	0.234	<0.002	0.004
Mercury	0.0082	0.0012	0.00253	0.1740	0.036	0.019
Molybdenum	0.02	0.04	<0.0080	<0.02	0.004	0.006
Nickel	<0.01	<0.01	<0.010	0.029	0.06	<0.016
Nitrate + Nitrite as N	0.69	1.38	2.68	0.02	0.93	2.9
Nitrate as N	--	--	--	--	--	--
Nitrite as N	--	--	--	--	--	--
pH (s.u.)	7.97	9.74	7.67	6.66	8.3	8.08
Phosphorous	<0.005	<0.05	<0.050	0.28	0.23	0.2
Potassium	3.2	2	2.9	11	3	<1
Scandium	<0.002	<0.002	<0.0020	<0.005	<0.05	<0.05
Selenium	<0.01	<0.01	<0.010	<0.01	<0.002	<0.002
Silver	<0.005	<0.005	<0.0050	<0.01	<0.002	<0.002
Sodium	3.8	2.6	5.09	10	8.7	24
Strontium	0.04	0.036	0.0486	0.293	0.06	<0.05
Sulfate	7.1	10.1	2.46	7	6.7	6.3
Thallium	<0.001	<0.001	<0.0010	0.0112	<0.001	<0.001
Thorium	--	--	--	--	--	--
Tin	<0.01	<0.01	<0.010	<0.05	<0.05	<0.05
Titanium	<0.005	<0.005	<0.0050	<0.005	<0.05	<0.05
Total Dissolved Solids	63	62	118	509	89	120
Uranium	--	--	--	--	--	--
Vanadium	<0.005	<0.005	<0.0050	<0.02	<0.004	0.006
Zinc	<0.005	<0.005	<0.0050	1.100	0.037	<0.05
Acid Base Accounting						
Paste pH (s.u.)	--	--	--	--	--	--
AGP (tons CaCO3/kTon material)	0.3	<0.3	0.31	1.6	6.4	<0.3
ANP (tons CaCO3/kTon material)	66.7	715	126	5.3	30	760
NNP (tons CaCO3/kTon material)	66.4	715	126	3.7	23.6	760
Total Sulfur (wt%)	--	--	--	--	--	--

MWMP Tests for Sage Flats Pits

Sample		Sample 1	Top TDC-2 10-20	Top TDC-2 90-100	Top TDC-2 110-120	Top TDC-2 120-130	Sample 2	Top MDC-2 190-199	Top MDC-2 180-190	Sample 3	Top TDC-2 320-330	Top TDC-2 310-320	Top TDC-4 140-150
Sample Date		12/21/1993	12/21/1993	12/21/1993	12/21/1993	12/21/1993	12/21/1993	12/21/1993	12/21/1993	12/21/1993	12/21/1993	12/21/1993	12/21/1993
Report Date		2/11/1994	2/11/1994	2/11/1994	2/11/1994	2/11/1994	2/11/1994	2/11/1994	2/11/1994	2/11/1994	2/11/1994	2/11/1994	2/11/1994
Location		Top	Top	Top	Top	Top	Mahoney	Mahoney	Mahoney	Top	Top	Top	Top
Hole Number		TDC-2	TDC-2	TDC-2	TDC-2	TDC-2	MDC-1	MDC-1	MDC-2	TDC-2	TDC-2	TDC-2	TDC-4
Interval		10-20, 90-100,	10-20	90-100	110-120	120-130	190-199, 180-190	190-199	180-190	320-330, 310-320,	320-330	310-320	140-150
Rock Type		Quartz Feldspar	Quartz Feldspar	Quartz Feldspar	Quartz Feldspar	Quartz Feldspar	Dolomitic	Dolomitic	Dolomitic	Dolomitic	Dolomitic	Dolomitic	Dolomitic
Alteration		Argillic	Argillic	Argillic	Argillic	Argillic	none	none	none	oxidized	oxidized	oxidized	oxidized
Lab	Units												
MWMP Extraction													
Alkalinity, Total	mg/L as CaCO3	39.9	--	--	--	--	51.1	--	--	47.1	--	--	--
Aluminum	mg/L	0.671	--	--	--	--	0.234	--	--	0.324	--	--	--
Antimony	mg/L	<0.05	--	--	--	--	<0.05	--	--	<0.05	--	--	--
Arsenic	mg/L	<0.1	--	--	--	--	<0.05	--	--	<0.1	--	--	--
Barium	mg/L	0.104	--	--	--	--	0.091	--	--	0.074	--	--	--
Beryllium	mg/L	<0.001	--	--	--	--	<0.001	--	--	<0.001	--	--	--
Bismuth	mg/L	<0.035	--	--	--	--	<0.035	--	--	<0.035	--	--	--
Boron	mg/L						--	--	--	--	--	--	--
Cadmium	mg/L	<0.005	--	--	--	--	<0.005	--	--	<0.005	--	--	--
Calcium	mg/L	12.8	--	--	--	--	17	--	--	16.4	--	--	--
Chloride	mg/L	18.5	--	--	--	--	23.3	--	--	31.5	--	--	--
Chromium	mg/L	<0.01	--	--	--	--	<0.01	--	--	<0.01	--	--	--
Cobalt	mg/L	<0.005	--	--	--	--	<0.005	--	--	<0.005	--	--	--
Copper	mg/L	0.023	--	--	--	--	<0.005	--	--	<0.005	--	--	--
Cyanide (WAD)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	mg/L	0.196	--	--	--	--	0.089	--	--	0.055	--	--	--
Gallium	mg/L	<0.01	--	--	--	--	<0.1	--	--	<0.1	--	--	--
Iron	mg/L	2.25	--	--	--	--	<0.05	--	--	0.163	--	--	--
Lead	mg/L	<0.03	--	--	--	--	<0.03	--	--	<0.03	--	--	--
Lithium	mg/L	<0.005	--	--	--	--	<0.005	--	--	0.007	--	--	--
Magnesium	mg/L	1.89	--	--	--	--	7.6	--	--	6.24	--	--	--
Manganese	mg/L	0.029	--	--	--	--	<0.005	--	--	0.008	--	--	--
Mercury	mg/L	0.0005	--	--	--	--	0.0103	--	--	0.0005	--	--	--
Molybdenum	mg/L	<0.01	--	--	--	--	<0.01	--	--	<0.01	--	--	--
Nickel	mg/L	<0.015	--	--	--	--	<0.015	--	--	<0.015	--	--	--
Nitrate + Nitrite as N	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate as N	mg/L	0.887	--	--	--	--	0.379	--	--	0.151	--	--	--
Nitrite as N	mg/L	<0.01	--	--	--	--	0.012	--	--	<0.01	--	--	--
pH (s.u.)	SU	8.02	--	--	--	--	8.44	--	--	8.14	--	--	--
Phosphorus	mg/L	0.056	--	--	--	--	0.021	--	--	0.025	--	--	--
Potassium	mg/L	2.23	--	--	--	--	1.49	--	--	2.88	--	--	--
Scandium	mg/L	<0.01	--	--	--	--	<0.01	--	--	<0.01	--	--	--
Selenium	mg/L	<0.05	--	--	--	--	<0.05	--	--	<0.05	--	--	--
Silver	mg/L	<0.01	--	--	--	--	0.026	--	--	<0.01	--	--	--
Sodium	mg/L	17.5	--	--	--	--	8.96	--	--	13.2	--	--	--
Strontium	mg/L	0.026	--	--	--	--	0.017	--	--	0.036	--	--	--
Sulfate	mg/L	4.21	--	--	--	--	3.06	--	--	3.52	--	--	--
Thallium	mg/L	<0.1	--	--	--	--	<0.1	--	--	<0.1	--	--	--
Tin	mg/L	<0.1	--	--	--	--	<0.1	--	--	<0.1	--	--	--
Titanium	mg/L	<0.0005	--	--	--	--	<0.005	--	--	<0.005	--	--	--
Total Dissolved Solids	mg/L	106	--	--	--	--	123	--	--	122	--	--	--
Vanadium	mg/L	<0.007	--	--	--	--	<0.007	--	--	<0.007	--	--	--
Zinc	mg/L	0.015	--	--	--	--	<0.005	--	--	<0.005	--	--	--
Acid Base Accounting													
Paste pH (s.u.)	SU	8.09	8.16	8.29	7.56	7.77	8.11	8.23	7.99	8.78	11.4	8.57	10.5
AGP (tons CaCO3/kton)		0.94	0.63	0.63	0.94	1.25	0.62	0.63	0.94	0.62	0.63	0.63	<0.6
ANP (tons CaCO3/kton)		11.1	12.9	18.3	9.76	9.76	445	817	792	921	860	970	10.4
Total Sulfur (%)		--	0.02	0.02	0.04	0.03	--	0.02	0.02	--	0.02	<0.02	<0.02

MWMP Tests for Sage Flats Pits (continued)

Sample	Top TDC-4 270-280	Sage Waste Facility - Sed Oxid (SGWF_Sed_OX)	Sage Waste Faciity - Int OX (SGWF_Int_OX)	Sage Waste Faciity - Int OX	Sage Waste Facility - Sed Oxid	Sage Waste Faciity	Sage Waste Facility	Sage Waste Faciity	Sage Waste Facility	Sage Waste Faciity	Sage Waste Facility	Sage Waste Facility	Sage Waste Facility
Sample Date	12/21/1993	12/17/2007	12/17/2007	3/19/2008	3/19/2008	12/3/2008	12/3/2008	1st Qtr. 2008	1st Qtr. 2008	2nd Qtr. 2008	2nd Qtr. 2008	3rd QTR 2008	3rd QTR 2008
Report Date	2/11/1994	12/17/2007	12/17/2007	3/19/2008	3/19/2008	12/3/2008	12/3/2008	3/19/2008	3/19/2008	6/23/2008	6/23/2008	9/25/2008	9/25/2008
Location	Top	Top	Top	SGWF_Int_OX	SGWF_Sed_OX	SGWF_Int_OX	SGWF_Sed_OX	SGWF_Int_OX	SGWF_Sed_OX	SGWF_Int_OX	SGWF_Sed_Redcd	SGWF_Int_OX	SGWF_Sed_OX
Hole Number	TDC-4	4th Qtr. 2007	4th Qtr. 2007	(1st Qtr Waste R)	(1st Qtr Waste R)	4th Qtr. 2008	4th Qtr. 2008						
Interval	270-280	SVL	SVL			SVL	SVL	SVL	SVL	SVL	SVL	SVL	SVL
Rock Type	Dolomitic	Nick/Ore Control	Nick/ Ore Control	NAtiemo	NAtiemo	Nick	Nick	Nick	Nick	Nick	Nick	Nick	Nick
Alteration	oxidized							39526	39526	39622	39622	39716	39716
Lab		W703124-05	W703124-06	W801278-02	W801278-03	W8L0154-01	W8L0154-02	W801278-02	W801278-03	W803452-02	W803452-03	W8I0548-01	W8I0548-02
MWMP Extraction													
Alkalinity, Total	--	72.5	51.7	76.8	89.6	112	170	76.8	89.6	69.8	209	101	52.7
Aluminum	--	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
Antimony	--	0.0628	0.00788	<0.00300	0.0333	0.0646	0.0582	<0.00300	0.0333	0.0115	0.193	0.0212	0.0556
Arsenic	--	0.044	0.0107	0.0663	0.0869	0.117	0.0936	0.0663	0.0869	0.13	0.0864	0.0167	0.0365
Barium	--	0.0169	0.0114	0.141	0.111	0.137	0.0486	0.141	0.111	0.109	0.0991	0.139	0.0544
Beryllium	--	<0.0020	<0.0020	<0.0020	<0.0020	<0.00200	<0.00200	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Bismuth	--												
Boron	--	0.118	<0.040	0.094	0.151	0.074	0.082	0.094	0.151	0.051	0.107	<0.040	0.043
Cadmium	--	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Calcium	--												
Chloride	--	1.93	0.88	2.9	3.87	1.73	11.9	2.9	3.87	5.15	23.6	2.16	4.21
Chromium	--	<0.0060	<0.0060	0.0297	<0.0060	<0.0060	<0.0060	0.0297	<0.0060	0.0065	<0.0060	<0.0060	<0.0060
Cobalt	--												
Copper	--	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	<0.010
Cyanide (WAD)	--									<0.0100	<0.0100		
Fluoride	--	0.283	0.231	0.459	0.611	0.44	0.413	0.459	0.611	1.14	0.196	<0.100	0.189
Gallium	--												
Iron	--	<0.060	<0.060	<0.060	0.063	<0.060	<0.060	<0.060	0.063	<0.060	<0.060	<0.060	<0.060
Lead	--	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300
Lithium	--												
Magnesium	--	2.94	1.36	1.17	1.67	4	16	1.17	1.67	1.02	49.5	10	5.37
Manganese	--	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Mercury	--	<0.00020	<0.00020	<0.00020	0.00038	0.00232	0.00098	<0.00020	0.00038	<0.00020	0.00355	<0.00020	0.102
Molybdenum	--												
Nickel	--	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate + Nitrite as N	--												
Nitrate as N	--	1.87	0.318	1.7	0.676	4.33	<1.00	1.7	0.676	1.06	1.88	0.211	43.3
Nitrite as N	--												
pH (s.u.)	--	7.64	7.3	7.2	7.44	7.94	8.1	7.2	7.44	8.34	8.79	8.35	8.05
Phosphorus	--												
Potassium	--	7.05	3.16	3.39	12.9	8.82	4.06	3.39	12.9	3.82	5.27	1.4	3.89
Scandium	--												
Selenium	--	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300
Silver	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium	--	8.48	4.03	21.8	19.9	8.48	9.93	21.8	19.9	25.7	9.37	1.89	4.19
Strontium	--												
Sulfate	--	8.46	3.39	15.1	20.7	17.8	7.87						
Thallium	--	0.0015	<0.00100	<0.00100	<0.00100	<0.00100	0.00283	<0.00100	<0.00100	<0.00100	0.00184	<0.00100	0.018
Tin	--												
Titanium	--												
Total Dissolved Solids	--												
Vanadium	--												
Zinc	--	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Acid Base Accounting													
Paste pH (s.u.)	8.88												
AGP (tons CaCO3/kton)	0.63	0	0	<0.3	<0.3	0	0	<0.3	<0.3	0	0	<0.03	<0.03
ANP (tons CaCO3/kton)	788	405.8	714.6	23.2	4.4	8	440	23.2	4.4	40.1	872	576	551
Total Sulfur (%)	<0.02	<0.01	<0.01	<0.01	<0.01	8	440	23.2	4.4	40.1	872	576	551

Baseline Geochemical Assessment
Bald Mountan North Area Expansion

MWMP Tests for Sage Flats Pits (continued)

Sample	Sage Waste Facility	Sage Waste Facility
Sample Date	3rd QTR 2008	3rd QTR 2008
Report Date	9/25/2008	9/25/2008
Location	SGWF_Sed_Redcd	SGWF_Sed_Redcd2
Hole Number		
Interval	SVL	SVL
Rock Type	Nick	Nick
Alteration	39716	39716
Lab	W8I0548-03	W8I0548-04
MWMP Extraction		
Alkalinity, Total	189	94.4
Aluminum	<0.080	<0.080
Antimony	0.0149	0.021
Arsenic	0.0732	0.00884
Barium	0.0918	0.156
Beryllium	<0.0020	<0.0020
Bismuth		
Boron	0.096	0.045
Cadmium	<0.0020	<0.0020
Calcium		
Chloride	16.9	2.98
Chromium	<0.0060	<0.0060
Cobalt		
Copper	<0.010	<0.010
Cyanide (WAD)		
Fluoride	0.217	<0.100
Gallium		
Iron	<0.060	<0.060
Lead	<0.00300	<0.00300
Lithium		
Magnesium	23.7	11.8
Manganese	<0.0040	<0.0040
Mercury	0.00043	<0.00020
Molybdenum		
Nickel	<0.010	<0.010
Nitrate + Nitrite as N		
Nitrate as N	2.45	0.334
Nitrite as N		
pH (s.u.)	8.23	8.41
Phosphorus		
Potassium	2.05	2.01
Scandium		
Selenium	<0.00300	<0.00300
Silver	<0.0050	<0.0050
Sodium	18.1	2.49
Strontium		
Sulfate		
Thallium	0.00174	<0.00100
Tin		
Titanium		
Total Dissolved Solids		
Vanadium		
Zinc	<0.0100	<0.0100
Acid Base Accounting		
Paste pH (s.u.)		
AGP (tons CaCO3/kton)	<0.03	<0.03
ANP (tons CaCO3/kton)	581	828
Total Sulfur (%)	581	828

MWMP Tests for Rat Pits

Sample Name		N. Rat	N. Rat	OHW Rat Waste	OFW Rat WASTE	Rat	S. Rat	S. Rat	S. Rat	S. Rat	S. Rat	S. Rat
Quarterly Report		1st Quarter 1993	2nd Quarter 1993	2nd Quarter 1992	2nd Quarter 1992	4th Quarter 1992	1st Quarter 1993	2nd Quarter 93	3rd Quarter 93	4th Quarter 93	1st Quarter 94	2nd Quarter 94
Sample Date		3/4/1993	6/7/1993	5/26/1992	5/26/1992	11/25/1992	3/4/1993	6/7/1993	9/16/1993	12/14/1993	3/7/1994	5/24/1994
Sample Type	Units	Composite	Composite	6/24/1992	6/24/1992	Composite	Composite	Composite	Composite	Composite	Composite	Composite
Lab ID		93-A000423	93-A001461	5807	5808	92-A001388	93-A000422	93-A001460	C-0042	93-A003686	94-A000658	94-A001978
MWMP Extraction												
Alkalinity, Total	mg/L as CaCO3	76.4	167	54.1	35.9	46.2	73.4	326	64	59.2	53.1	54.9
Alkalinity, Bicarbonate	mg/L as CaCO3	--	--	--	--	--	--	--	--	--	--	--
Aluminum	mg/L	0.099	1.47	0.084	0.139	0.309	<0.0100	2.31	<0.0500	1.03	0.0258	0.199
Antimony	mg/L	< 0.0500	< 0.0500	<0.05	<0.05	<0.05	< 0.0500	<0.0500	0.004	<0.0500	<0.0550	<0.0500
Arsenic	mg/L	< 0.0190	0.17	<0.01	<0.01	0.022	0.014	0.085	<0.0001	0.134	<0.0500	0.16
Barium	mg/L	0.435	0.186	0.128	0.06	0.136	0.358	0.158	3.51	0.226	0.366	0.249
Beryllium	mg/L	< 0.0010	0.006	<0.001	<0.001	<0.001	< 0.0010	<0.0010	<0.0100	<0.0010	<0.0010	<0.0010
Bismuth	mg/L	< 0.0350	< 0.0350	<0.035	<0.035	<0.035	< 0.0350	<0.0350	<0.1000	<0.0350	<0.0350	<0.0350
Boron	mg/L	--	--	0.167	0.141	--	--	--	--	--	--	--
Cadium	mg/L	< 0.0050	<0.0050	<0.007	<0.007	<0.01	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Calcium	mg/L	76.5	63.1	16.6	12.1	16.6	24.2	45.2	472	30.5	28.4	21.2
Chloride	mg/L	4	3.45	<0.25	0.61	1.11	0.5	1.26	1	0.37	<0.0100	1.66
Chromium	mg/L	< 0.0100	0.13	<0.01	<0.01	<0.01	< 0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Cobalt	mg/L	< 0.0050	0.008	<0.007	<0.007	<0.005	< 0.0050	<0.0050	<0.0100	<0.0050	<0.0050	<0.0050
Copper	mg/L	< 0.0050	0.016	<0.007	<0.007	0.007	< 0.0050	<0.0050	<0.0100	0.009	<0.0050	<0.0050
Cyanide (WAD)	mg/L	--	--	--	--	--	--	--	--	--	--	--
Fluoride	mg/L	0.165	0.47	<0.1	<0.1	0.198	0.13	0.35	0.4	0.201	0.286	3.23
Gallium	mg/L	< 0.1000	< 0.1000	<0.02	<0.02	<0.1	< 0.1000	<0.1000	<0.1000	<0.1000	<0.1000	<0.1000
Iron	mg/L	0.24	2.04	0.02	0.054	0.276	0.63	1.96	<0.0200	3.15	<0.0500	<0.3830
Lead	mg/L	< 0.0050	< 0.0300	<0.05	<0.05	<0.005	< 0.0050	<0.0300	<0.0010	<0.0300	<0.0300	<0.0300
Lithium	mg/L	0.007	0.015	<0.005	<0.005	<0.005	< 0.0050	<0.0050	<0.0500	<0.0100	0.005	0.009
Magnesium	mg/L	22.1	9.23	2	0.687	6.3	7.98	7.24	66.3	6.17	6.19	6.25
Manganese	mg/L	0.014	0.079	0.007	0.008	0.008	0.019	0.068	0.06	0.058	<0.0050	0.005
Mercury	mg/L	< 0.0002	< 0.0003	0.000689	0.000669	<0.0005	0.0003	<0.0003	<0.0002	0.0005	<0.0002	<0.0002
Molybdenum	mg/L	< 0.0100	0.053	<0.015	<0.015	<0.01	< 0.0100	0.011	<0.0100	<0.0100	<0.0150	<0.0100
Nickel	mg/L	< 0.0150	< 0.0150	<0.015	<0.015	--	< 0.0150	<0.0150	<0.0100	<0.0150	<0.0150	<0.0150
Nitrate + Nitrite as N	mg/L	--	--	--	--	7.57	--	--	--	--	--	--
Nitrate as N	mg/L	--	--	0.5	1	--	--	--	--	--	--	--
Nitrite as N	mg/L	--	--	--	--	--	--	--	--	--	--	--
pH (s.u.)	SU	8.06	8.44	7.2	6.8	8.38	8.43	8.34	8.2	8.41	8.07	8.27
Phosphorus	mg/L	0.065	0.148	0.029	0.045	<0.026	0.06	0.087	<0.0500	0.111	<0.0100	0.017
Potassium	mg/L	6.68	8.06	<1.5	<1.5	2.37	2.48	3.74	15.9	2.46	3.16	3.86
Scandium	mg/L	< 0.0100	0.011	<0.01	<0.01	<0.01	< 0.0100	<0.0100	<0.0500	<0.0100	<0.0100	<0.0100
Selenium	mg/L	< 0.0050	< 0.0050	<0.005	<0.005	<0.005	< 0.0050	<0.0050	<0.0020	<0.0500	<0.0500	<0.0500
Silver	mg/L	< 0.0100	< 0.0100	<0.02	<0.02	<0.01	< 0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Sodium	mg/L	7.95	12.1	3.47	4.2	4.06	1.47	6.68	7.68	3.97	6.94	4.48
Strontium	mg/L	0.244	0.141	0.009	0.036	0.038	0.031	0.188	1.99	0.064	0.122	0.101
Sulfate	mg/L	5.92	15.1	3.3	3.82	7.72	5.07	11.2	15	4.6	16.4	11
Thallium	mg/L	< 0.0050	< 0.0050	<0.15	<0.15	<0.005	< 0.0050	<0.0050	<0.0100	<0.1000	<0.0100	<0.1000
Tin	mg/L	< 0.1000	< 0.1000	<1.3	<1.3	<0.2	< 0.1000	<0.1000	<0.1000	<0.1000	<0.1000	<0.1000
Titanium	mg/L	0.005	0.021	<0.001	0.001	<0.005	< 0.0050	0.052	<0.0100	0.015	0.005	<0.0050
Total Dissolved Solids	mg/L	504	172	119	64	137	164	112	166	206	151	130
Vanadium	mg/L	< 0.0070	0.016	<0.007	<0.007	<0.007	< 0.0070	0.008	<0.0100	0.011	<0.0070	<0.0070
Zinc	mg/L	< 0.0050	0.023	0.008	<0.005	<0.005	0.009	0.013	0.005	0.031	<0.0130	0.013
Acid Base Accounting												
Paste pH (s.u.)		8.73	8.56	8.15	7.98	8.85	8.31	8.71	8.2	8.57	8.36	8.33
AGP (tons CaCO3/kton)		< 0.6000	0.62	1	1	0.94	0.63	0.94	0.6	0.94	<3.47	1.88
ANP (tons CaCO3/kton)		633	401	938	544	703	773	470	537	563	399	318
NNP (tons CaCO3/kton)		633	400.38	937	543	702.06	772.37	469.06	536.4	562.06	396	316.12

MWMP Tests for Rat Pits (continued)

Sample Name	S. Rat	S. Rat	S. Rat	S. Rat	Stage (Rat)	Stage (Rat)	Stage (Rat)	Stage (Rat)	Stage (Rat)	Stage (Rat)	Stage (Rat)	Stage (Rat)
Quarterly Report	3rd Quarter 1994	4th Quarter 1994	2nd Quarter 1996	3rd Quarter 1996	1st Quarter 1993	2nd Quarter 1993	3rd Quarter 1993	4th Quarter 1993	1st Quarter 1994	1st Quarter 1995	2nd Quarter 1995	3rd Quarter 1995
Sample Date	9/23/1994	11/19/1994	6/14/1996	8/7/1996	3/4/1993	6/7/1993	9/16/1993	12/14/1993	3/7/1994	2/23/1995	6/14/1995	8/31/1995
Sample Type	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	7/10/1995	Composite
Lab ID	94-A003348	94-A004114			93-A000424	93-A001462	C0042	A003687	A94-A000657	SP032701	95-A001260	95-A002410
MWMP Extraction												
Alkalinity, Total	57	67.1	48	57	72.9	24	92	53.2	52.1	83.8	67.9	63.6
Alkalinity, Bicarbonate	--	--	48	--	--	--	--	--	--	--	67.9	63.6
Aluminum	0.3	0.2	0.06	<0.01	< 0.3770	0.691	<0.0500	0.707	0.274	0.159	0.45	0.554
Antimony	<0.1	<0.1	0.004	0.026	< 0.0500	< 0.0500	< 0.0030	< 0.0500	< 0.0500	< 0.0250	<0.2	0.016
Arsenic	<0.2	<0.1	0.13	0.17	0.068	0.099	0.019	0.143	< 0.0500	0.036	<0.1	<0.1
Barium	0.305	0.253	0.092	<0.1	0.052	0.081	3.52	0.233	0.309	0.102	0.051	0.094
Beryllium	<0.005	<0.005	<0.0002	<0.1	< 0.0010	< 0.0010	< 0.0100	< 0.0010	< 0.0010	< 0.0060	<0.005	0.009
Bismuth	<0.035	<0.035	<0.05	<0.1	< 0.0350	< 0.350	< 0.1000	< 0.0350	< 0.0350	< 0.0050	<0.035	<0.035
Boron	--	--	--	--	--	--	--	--	--	--	--	--
Cadium	<0.005	<0.005	<0.001	<0.001	<0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.001	<0.005	<0.005
Calcium	31.6	23.2	<11.1	34	27.7	31.6	940	58.9	24	22.2	17.7	20.6
Chloride	2.52	1.55	<1	2	7.5	2.23	2	2.23	11.4	7.3	2.11	3.15
Chromium	<0.1	<0.1	<0.001	<0.1	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.001	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.002	<0.1	< 0.0050	< 0.0050	< 0.0100	< 0.0050	< 0.0050	0.004	<0.005	0.01
Copper	<0.005	<0.005	0.017	<0.1	< 0.0050	< 0.0050	< 0.0100	0.008	< 0.0050	0.001	0.006	0.01
Cyanide (WAD)	--	--	--	279	--	--	--	--	--	--	--	<0.005
Fluoride	0.362	0.357	0.5	0.4	0.327	0.37	0.4	0.287	0.274	0.52	0.846	1.25
Gallium	<0.1	<0.1	<0.01	<0.1	< 0.1000	< 0.1000	< 0.1000	< 0.1000	< 0.1000	0.017	<0.1	<0.1
Iron	0.054	0.055	0.008	<0.1	0.774	3.44	< 0.0200	3.74	< 0.0500	0.204	0.433	<0.05
Lead	<0.03	<0.03	<0.005	<0.005	< 0.0050	< 0.0300	< 0.0010	< 0.0300	< 0.0300	0.043	<0.03	<0.03
Lithium	0.008	<0.005	0.003	<0.1	< 0.0050	0.01	< 0.0500	< 0.0100	< 0.0050	0.021	0.006	0.02
Magnesium	14.1	5.54	5.47	30	3.56	7.48	113	8.83	< 7.6200	5.12	7.23	11.9
Manganese	0.006	<0.005	0.003	<0.1	0.016	0.043	0.16	0.078	0.005	0.005	0.008	0.011
Mercury	<0.0002	<0.0002	0.0004	<0.0005	0.0005	< 0.0003	< 0.0002	<0.0002	< 0.0002	< 0.0002	0.0002	0.0003
Molybdenum	0.019	0.011	0.02	<0.1	< 0.0100	0.017	< 0.0100	0.014	< 0.0100	0.001	<0.01	0.036
Nickel	<0.015	<0.015	<0.002	<0.1	< 0.0150	< 0.0150	0.02	< 0.0150	< 0.0150	0.009	<0.015	<0.015
Nitrate + Nitrite as N	--	--	1.83	0.2	--	--	--	--	--	--	4.69	6.6
Nitrate as N	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite as N	--	--	--	--	--	--	--	--	--	--	--	--
pH (s.u.)	8.04	8.32	8.27	8.14	8.15	8.33	8.47	8.25	8.2	8.1	8.17	7.89
Phosphorus	0.032	0.025	0.07	<0.1	0.143	< 0.1000	< 0.0500	0.029	0.012	< 0.0200	0.028	<0.025
Potassium	6.5	3.08	5.08	17	3.79	5.79	34.2	5.46	4.72	2.72	4.02	8.08
Scandium	<0.01	<0.01	<0.005	<0.1	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.001	<0.1	0.018
Selenium	<0.1	<0.1	<0.002	0.018	< 0.0050	< 0.0050	0.004	< 0.0500	< 0.0500	0.038	<0.1	<0.1
Silver	<0.01	<0.01	<0.002	<0.002	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0250	<0.01	<0.01
Sodium	4.88	5.68	2.14	4.7	7.72	5.44	9.2	4.43	8.8	6.64	10.3	7.71
Strontium	0.195	0.086	0.56	0.2	0.07	0.089	1.25	0.144	0.101	0.089	0.066	0.112
Sulfate	15.5	7.74	7	130	4.93	12.5	< 18.0000	7.98	6.49	8.13	7.17	40.8
Thallium	<0.1	<0.1	<0.001	<0.001	< 0.0050	< 0.0050	< 0.0100	< 0.1000	< 0.1000	0.252	<0.1	<0.002
Tin	<0.1	<0.1	<0.02	<0.5	< 0.1000	< 0.1000	< 0.1000	< 0.1000	< 0.1000	< 0.0080	<0.1	<0.1
Titanium	<0.005	<0.005	<0.002	<0.1	< 0.0050	0.009	< 0.0100	0.012	< 0.0050	0.018	0.008	0.009
Total Dissolved Solids	216	128	48	279	208	168	182	117	159	129	<0.007	83
Vanadium	<0.007	<0.007	<0.002	<0.1	< 0.0070	< 0.0070	< 0.0100	0.0009	< 0.0070	0.002	120	0.011
Zinc	0.009	0.01	0.005	<0.1	0.008	0.023	0.006	0.033	0.012	0.046	<0.005	0.015
Acid Base Accounting												
Paste pH (s.u.)	7.81	8.71	8.86	9.83	8.19	8.65	8.47	8.63	8.42	10.67	9.34	9.06
AGP (tons CaCO3/kton)	5	2.81	3.53	19	3.13	1.88	0.3	2.5	1.88	0.9	1.25	2.66
ANP (tons CaCO3/kton)	677	406	438	742	305	521	539	663	646	889.1	846	626
NNP (tons CaCO3/kton)	672	403.19	434.47	723	301.87	519.12	538.7	660.5	644.12	888.2	844.75	623.34

MWMP Tests for Rat Pits (continued)

Sample Name	Stage (Rat)	RAT Waste Facility - Sed OX (RWF_Sed_OX)	RAT Waste Facility - Sed OX (RWF_Sed_OX)	RAT Waste Facility - Sed OX (RWF_Sed_OX)	RAT Waste Facility - Sed OX (RWF_Sed_OX)	RAT Waste Facility - Sed OX (RWF_Sed_OX)	RAT Waste Facility - Sed OX	RAT Waste Facility
Quarterly Report	4th Quarter 1995	4th Qtr. 2006	1st Qtr. 2007	2nd Qtr. 2007	3rd Qtr. 2007	4th Qtr. 2007	RWF_Sed_OX	RWF_Sed_OX
Sample Date	12/5/1995	12/28/06	03/16/07	06/12/07	09/13/07	12/17/07	1st QTR 2008	1st Qtr. 2008
Sample Type	Composite	Nick	Nick/Ore Control	Nick/Ore Control	Nick/Ore Control	Nick/Ore Control	3/19/2008	3/19/2008
Lab ID	95-A003469	E556619	E565821	E581646	W701328-06	W703124-04	W801278-04	W801278-04
MWMP Extraction								
Alkalinity, Total	55.1	119	44.3	88.4	53.2	55.5	89.2	89.2
Alkalinity, Bicarbonate	55.1	109	44.3	81.9	47	55.5	89.2	89.2
Aluminum	<0.075	<0.080	<0.080	<0.08	<0.080	0.103	<0.080	<0.080
Antimony	<0.02	0.0124	0.0032	0.0128	0.00834	0.00305	0.0164	0.0164
Arsenic	0.069	<0.025	0.0136	0.016	0.0051	<0.00300	0.0193	0.0193
Barium	0.085	0.245	0.146	0.262	0.242	0.165	0.218	0.218
Beryllium	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Bismuth	<0.011	<0.06						
Boron	--	<0.04	0.17	<0.040	<0.040	<0.040	0.074	0.074
Cadium	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Calcium	25.3							
Chloride	8.28	2.55	1.13	4.39	3.71	2.18	4.97	4.97
Chromium	<0.003	<0.0060	<0.0060	<0.006	<0.0060	<0.0060	<0.0060	<0.0060
Cobalt	<0.001	<0.006						
Copper	0.003	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cyanide (WAD)	--	<0.010	<0.010	<0.010				
Fluoride	0.696	<0.100	0.41	0.12	<0.100	0.391	0.13	0.13
Gallium	<0.006	<0.020						
Iron	0.097	<0.06	<0.06	<0.06	<0.060	<0.060	<0.060	<0.060
Lead	0.015	<0.0075	<0.0075	0.0109	<0.00300	<0.00300	<0.00300	<0.00300
Lithium	0.008	<0.020						
Magnesium	12.5	23.3	3.05	18.7	8.9	1.25	14.9	14.9
Manganese	0.003	<0.004	<0.004	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Mercury	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Molybdenum	0.021	0.01						
Nickel	<0.006	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate + Nitrite as N	--							
Nitrate as N	12.7	4.06	7.53	3.06	0.663	3.1	0.278	
Nitrite as N	0.267							0.278
pH (s.u.)	8.18						8.08	8.08
Phosphorus	<0.025	<0.05						
Potassium	7.47	2	2.3	3.13	3.25	7.62	2.99	2.99
Scandium	<0.001							
Selenium	<0.04	<0.04	0.004	<0.0030	<0.00300	<0.00300	<0.00300	<0.00300
Silver	<0.01	<0.0050	<0.0050	<0.005	<0.0050	<0.0050	<0.0050	<0.0050
Sodium	4.78	6.1	2.77	3.84	2.86	2.58	13.1	13.1
Strontium	0.112	0.041						
Sulfate	29.8	14.9	11.6	13.8	11.3	12.1	19.7	19.7
Thallium	<0.002	<0.0020	<0.00200	<0.00200	<0.00100	<0.00100	<0.00100	<0.00100
Tin	<0.1	<0.05						
Titanium	<0.005	<0.0050						120
Total Dissolved Solids	173							
Vanadium	<0.007	0.0106						
Zinc	0.003	<0.010	<0.010	<0.010	<0.0100	<0.0100	<0.0100	<0.0100
Acid Base Accounting								
Paste pH (s.u.)	8.77	8.46	7.35	8.59	8.61	7.74		
AGP (tons CaCO3/kton)	5.62	<0.3	<0.3	<0.3	0	0	<0.3	<0.3
ANP (tons CaCO3/kton)	364	857	711	913	965.44	502.8	931	931
NNP (tons CaCO3/kton)	358.38	857	711	913	965.44	502.8	931	931

MWMP Tests for Saga Pits

Station Name		Saga Waste Facility Sed Redcd	Saga Waste Facility Sed Oxid	Saga Waste Facility Int Oxide	Saga Waste Facility Sed Oxid	Saga Waste Facility Sed Oxide	Saga Waste Facility Sed Redcd	Saga Waste Facility	Saga Waste Facility	Saga Waste Facility	Saga Waste Facility	Saga Waste Facility
Stn.Code		SWF_Sed_Redcd	SWF_Sed_OX	SWF_Int_OX	SWF_Sed_OX	SWF_Sed_OX	SWF_Sed_Redcd	SWF_Sed_OX	SWF_Sed_OX	SWF_Sed_Redcd	SWF_Sed_OX	SWF_Sed_OX
Sampling Session		4th Qtr. 2007	4th Qtr. 2007	3rd Qtr. 2007	1st Qtr Waste R	2nd Qtr. 2008	2nd QTR 2008	1st Qtr. 2008	2nd Qtr. 2008	2nd Qtr. 2008	3rd QTR 2008	4th Qtr. 2008
Collect Date/Time		12/17/07	12/17/07	09/13/07	03/19/08	06/23/08	06/23/08	03/19/08	06/23/08	06/23/08	09/25/08	12/03/08
Lab Name		SVL	SVL	SVL	SVL	SVL	SVL	SVL	SVL	SVL	SVL	SVL
Sampled By		Nick/Ore Control	Nick/Ore Control	Nick/Ore Control	NAtiemo	Nick	Nick	Nick	Nick	Nick	Nick	Nick
Lab Test Date	Units	12/17/2007	12/17/2007	9/13/2007	3/19/2008	6/23/2008	6/23/2008	3/19/2008	6/23/2008	6/23/2008	9/25/2008	12/3/2008
Lab Reference Number		W703124-03	W703124-02	W701328-05	W801278-01	W803452-04	W803452-01	W801278-01	W803452-04	W803452-01	W8I0548-05	W8L0154-07
MWMP Extraction												
Alkalinity, Total	mg/L as CaCO3	60	67.6	113	63.8	89.9	48	63.8	89.9	48	62.2	86.5
Alkalinity, Bicarbonate	mg/L as CaCO3	60	67.6	107	63.8	87.8	48	63.8	87.8	48	62.2	86.5
Aluminum	mg/L	<0.080	<0.080	0.618	0.435	0.392	<0.080	0.435	0.392	<0.080	<0.080	0.183
Antimony	mg/L	<0.00300	0.0846	0.00407	0.0103	0.00388	0.127	0.0103	0.00388	0.127	<0.00300	0.0142
Arsenic	mg/L	0.00526	0.054	0.252	0.0116	0.0591	0.0135	0.0116	0.0591	0.0135	0.0169	0.0257
Barium	mg/L	0.0194	0.199	0.0637	0.146	0.0504	0.206	0.146	0.0504	0.206	0.209	0.101
Beryllium	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.00200
Bismuth	mg/L											
Boron	mg/L	<0.040	0.044	0.404	0.067	0.393	0.065	0.067	0.393	0.065	0.051	0.078
Cadium	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Calcium	mg/L											
Chloride	mg/L	8.31	1.03	50.8	1.38	92.6	3.63	1.38	92.6	3.63	3.68	8.34
Chromium	mg/L	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Cobalt	mg/L											
Copper	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cyanide (WAD)	mg/L					<0.0100	<0.0100		<0.0100	<0.0100		
Fluoride	mg/L	0.248	1.52	1.98	0.433	1.09	0.64	0.433	1.09	0.64	0.442	1.04
Gallium	mg/L											
Iron	mg/L	<0.060	<0.060	0.2	0.079	0.098	<0.060	0.079	0.098	<0.060	<0.060	<0.060
Lead	mg/L	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	0.00382	<0.00300	<0.00300	0.00382	<0.00300	<0.00300
Lithium	mg/L											
Magnesium	mg/L	221	1.2	4.17	4.04	7.55	1.6	4.04	7.55	1.6	1.55	2.43
Manganese	mg/L	0.502	<0.0040	0.0049	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Mercury	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	0.00023	<0.00020	<0.00020	0.00023	<0.00020	0.00077	0.00194
Molybdenum	mg/L											
Nickel	mg/L	0.275	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate + Nitrite as N	mg/L											
Nitrate as N	mg/L	13.7	2.12	1.83	1.42	3.75	4.11					
Nitrite as N	mg/L							1.42	3.75	4.11	5.94	1.29
pH (s.u.)	SU	7.23	8.1	8.43	7.01	8.4	8.28	7.01	8.4	8.28	8.25	8.11
Phosphorus	mg/L											
Potassium	mg/L	26.2	5.49	3.51	10.1	5.15	8.79	10.1	5.15	8.79	5.88	14.9
Scandium	mg/L											
Selenium	mg/L	0.0517	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300
Silver	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium	mg/L	21.6	6.9	170	6.81	117	5.77	6.81	117	5.77	14.6	20
Strontium	mg/L											
Sulfate	mg/L	1830	18.8	172	40	143	19.4	40	143	19.4	23.9	47.4
Thallium	mg/L	0.00796	0.00197	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Tin	mg/L											
Titanium	mg/L											
Total Dissolved Solids	mg/L							140				
Vanadium	mg/L											
Zinc	mg/L	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Acid Base Accounting												
Paste pH (s.u.)												
AGP (tons CaCO3/kton)		56.85	7	2.87	8.53	0	0	8.53	0	0	<0.03	3.94
ANP (tons CaCO3/kton)		306.3	71.5	53.78	<0.3	185	791	<0.3	185	791	258	3.5
NNP (tons CaCO3/kton)		249.4	64.5	50.91	-8.53	185	791	-8.53	185	791	258	-0.44

MWMP Tests for LJ Pits

Sample ID		LJC-3-1-M	LJC-4-2-M	SRC-1-2-M	LJC-6-1-A	LJC-3-1-A	LJC-8-1-A	LJC-5-2-A	LJC-4-2-A	LJC-8-2-A	SRC-1-2-A	SRC1135140D	LJC2170175D
Sample Location		LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge
Sample Type		drillhole composite	drillhole composite	drillhole composite	drillhole composite	drillhole composite	drillhole composite	drillhole composite	drillhole composite	drillhole composite	drillhole composite	drillhole composite	drillhole composite
Drill Hole		LJC-3	LJC-4-2-M	SRC-1	LJC-6	LJC-3	LJC-8	LJC-5	LJC-4-2-A	LJC-8	SRC-1-2-A	SRC-1	LJC-2
Interval		35-40	175-180	25-30	140-145	40-45	245-250	80-85	170-175	380-385	20-25	135-140	170-175
Formation		Hamburg	Hamburg	Hamburg	Hamburg	Hamburg	Hamburg	Dunderberg	Dunderberg	Dunderberg	Dunderberg	Dunderberg	Dunderberg
Rock Type		Limestone	Silty Limestone	Silty Limestone	Silty Limestone	Limestone	Limestone	Silty Limestone	Silty Limestone	Silty Limestone	Silty Limestone	Silty Limestone	Silty Limestone
Alteration		argillic	carbonaceous	none	argillic	argillic	none	carbonaceous	carbonaceous	carbonaceous	none	carbonaceous	carbonaceous
Mineralization		none	0.1% py	0.1% py	trace py	none	0.5 py/arsenopy	trace py	trace py	trace py	0.1% py	trace py	none
Reporting Period		--	--	--	--	--	--	--	--	--	--	--	--
Sample Date	Units	1/31/1996	1/31/1996	1/31/1996	1/31/1996	1/31/1996	1/31/1996	1/31/1996	1/31/1996	1/31/1996	1/31/1996	3/29/1996	3/29/1996
Lab ID		--	--	--	--	--	--	--	--	--	--	--	--
MWMP Extraction													
Alkalinity, Total	mg/L as CaCO3	17.9	12.1	15.8	--	--	--	--	--	--	--	29	35
Alkalinity, Bicarbonate	mg/L as CaCO3	17.9	12.1	15.8	--	--	--	--	--	--	--	29	35
Aluminum	mg/L	0.231	0.15	0.125	--	--	--	--	--	--	--	0.16	0.2
Antimony	mg/L	0.003	<0.002	0.006	--	--	--	--	--	--	--	<0.08	<0.08
Arsenic	mg/L	0.006	<0.005	0.016	--	--	--	--	--	--	--	0.051	0.01
Barium	mg/L	0.024	0.018	0.019	--	--	--	--	--	--	--	0.01	0.03
Beryllium	mg/L	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	<0.001	<0.001
Bismuth	mg/L	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	<0.2	<0.2
Boron	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/L	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	<0.005	<0.005
Calcium	mg/L	6.04	5.02	4.11	--	--	--	--	--	--	--	8.3	8
Chloride	mg/L	<1.5	<1.5	<1.5	--	--	--	--	--	--	--	<1	<1
Chromium	mg/L	<0.003	<0.003	0.003	--	--	--	--	--	--	--	<0.005	<0.005
Cobalt	mg/L	<0.001	<0.001	0.003	--	--	--	--	--	--	--	<0.01	<0.01
Copper	mg/L	0.009	0.003	0.01	--	--	--	--	--	--	--	<0.01	<0.01
Cyanide (WAD)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride	mg/L	0.022	0.019	0.023	--	--	--	--	--	--	--	<0.5	<0.5
Gallium	mg/L	<0.006	<0.006	<0.006	--	--	--	--	--	--	--	<0.05	<0.05
Iron	mg/L	0.055	<0.05	<0.05	--	--	--	--	--	--	--	<0.01	0.04
Lead	mg/L	<0.002	0.01	<0.002	--	--	--	--	--	--	--	<0.005	<0.005
Lithium	mg/L	<0.002	<0.002	0.003	--	--	--	--	--	--	--	<0.01	<0.01
Magnesium	mg/L	0.572	0.36	0.332	--	--	--	--	--	--	--	0.7	2.9
Manganese	mg/L	0.009	0.004	0.01	--	--	--	--	--	--	--	<0.01	<0.01
Mercury	mg/L	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	--	<0.0002	0.0002
Molybdenum	mg/L	0.006	<0.004	<0.004	--	--	--	--	--	--	--	<0.02	<0.02
Nickel	mg/L	<0.006	<0.006	<0.006	--	--	--	--	--	--	--	<0.01	<0.01
Nitrate + Nitrite as N	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate as N	mg/L	0.02	<0.01	0.02	--	--	--	--	--	--	--	0.03	0.03
Nitrite as N	mg/L	<0.01	<0.01	<0.01	--	--	--	--	--	--	--	<0.01	<0.01
pH (s.u.)	SU	7.32	7.59	7.43	--	--	--	--	--	--	--	8.01	7.94
Phosphorus	mg/L	<0.025	<0.025	<0.025	--	--	--	--	--	--	--	0.01	<0.01
Potassium	mg/L	<1	<1	<1	--	--	--	--	--	--	--	0.8	1.3
Scandium	mg/L	0.002	<0.001	<0.001	--	--	--	--	--	--	--	<0.02	<0.02
Selenium	mg/L	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	<0.002	<0.002
Silver	mg/L	<0.01	<0.01	<0.01	--	--	--	--	--	--	--	<0.005	<0.005
Sodium	mg/L	1.15	1.26	2.52	--	--	--	--	--	--	--	1.6	1.1
Strontium	mg/L	0.019	0.021	0.025	--	--	--	--	--	--	--	0.05	0.08
Sulfate	mg/L	<1	<1	1.87	--	--	--	--	--	--	--	<5	<5
Thallium	mg/L	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	<0.001	<0.001
Tin	mg/L	<0.1	<0.1	<0.1	--	--	--	--	--	--	--	<0.1	<0.1
Titanium	mg/L	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	<0.01	<0.01
Total Dissolved Solids	mg/L	20	20	26	--	--	--	--	--	--	--	<5	20
Vanadium	mg/L	<0.007	<0.007	<0.007	--	--	--	--	--	--	--	<0.01	<0.01
Zinc	mg/L	0.005	<0.002	0.004	--	--	--	--	--	--	--	0.06	<0.01
Acid Base Accounting													
AGP (tons CaCO3/kton)		1	3.25	1.31	3.88	0.91	1.41	2.94	3.75	1.16	3.81	--	--
ANP (tons CaCO3/kton)		867	822	488	938	994	829	540	612	580	686	--	--
NNP (tons CaCO3/kton)		866	818.75	486.69	934.12	993.09	827.59	537.06	608.25	578.84	682.19		
Paste pH (s.u.)		10.8	11.5	10.7	10.4	11.1	11.5	10.9	10.6	10.3	10.9	--	--

MWMP Tests for LJ Pits (continued)

Sample ID	LJC103540H	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge
Sample Location	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge	LJ Ridge
Sample Type	drillhole composite												
Drill Hole	LJC-10												
Interval	35-40	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite
Formation	Hamburg												
Rock Type	Limestone												
Alteration	argillic												
Mineralization	none												
Reporting Period	--	4th Quarter 1997	2nd Quarter 1998	2nd Quarter 1998	2nd Quarter 1998	4th Quarter 1998	1st Quarter 1999	3rd Quarter 1999	4th Quarter 1999	1st Quarter 2000	2nd Quarter 2000	3rd Quarter 2000	4th Quarter 2000
Sample Date	3/29/1996	18-Nov-97	Mar-98	Apr-98	May-98	9-Oct-98	06-22-99	08-31-99	Nov-99	6-Mar-00	4-Jun-00	16-Aug-00	21-Nov-00
Lab ID	--	974205-1	982392-3	982392-1	982392-2	983449	992239-2	9909095-1A	9912090	E228254	E234754	E241835	249832
MWMP Extraction													
Alkalinity, Total	26	42	68	54	40	56	16	32	23	23.8	40.1	24.7	61.2
Alkalinity, Bicarbonate	26	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum	0.07	0.1	0.02	0.03	0.06	0.05	0.07	0.047	ND	0.03	0.128	0.051	0.1
Antimony	<0.08	0.032	<0.003	0.0040	0.0430	0.087	<0.003	ND	ND	<0.002	<0.002	<0.002	<0.005
Arsenic	<0.005	0.023	0.0160	0.0520	0.0460	0.059	<0.003	ND	0.0041	0.001	0.019	<0.04	0.03
Barium	0.02	0.27	0.1100	0.06	0.09	0.19	<0.02	0.012	0.26	0.006	0.009	0.01	0.016
Beryllium	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	ND	ND	<0.002	<0.002	<0.002	<0.002
Bismuth	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	ND	<0.024	0.094	0.049	<0.02
Boron	--	--	--	--	--	0.3	<0.1	--	--	0.084	0.066	0.062	0.08
Cadmium	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	ND	ND	<0.0024	<0.0024	<0.002	<0.002
Calcium	8	14	15.1	11.6	9.22	14.20	5.54	3.2	6.2	7.07	7.48	7.54	15.4
Chloride	<1	<4	8	<4	<4	4	<4	ND	ND	0.2	0.3	0.3	1.1
Chromium	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	<0.005	<0.005	<0.006	<0.006
Cobalt	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	<0.005	<0.005	<0.006	<0.006
Copper	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	ND	0.013	<0.003	<0.003	<0.003	0.005
Cyanide (WAD)	--	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	<0.01	<0.01	<0.01	<0.01
Fluoride	<0.5	0.3	0.3	0.3	0.3	0.5	<0.1	ND	ND	<0.1	<0.1	<0.1	0.3
Gallium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	ND	<0.022	<0.022	<0.022	<0.02
Iron	<0.01	<0.1	0.02	0.01	0.02	<0.05	<0.1	ND	ND	<0.02	<0.02	<0.02	<0.02
Lead	<0.005	<0.003	<0.002	<0.002	<0.002	<0.002	0.003	ND	ND	<0.002	<0.002	<0.002	<0.005
Lithium	<0.01	<0.02	0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	<0.003	<0.003	<0.004	<0.004
Magnesium	0.6	1.8	10.5	5.43	4.08	3.18	0.77	0.6	1.1	0.854	0.69	0.653	5.36
Manganese	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	ND	<0.002	<0.002	<0.002	0.003
Mercury	<0.0002	0.0011	0.001	<0.0002	<0.0002	<0.0002	<0.0002	ND	ND	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	ND	ND	<0.008	0.015	<0.008	0.021
Nickel	<0.01	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	ND	ND	<0.023	<0.023	<0.024	<0.005
Nitrate + Nitrite as N	--	3	4.98	0.74	1.71	4.79	<0.05	0.27	0.15	--	--	0.21	--
Nitrate as N	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite as N	<0.01	--	--	--	--	--	--	--	--	--	--	--	--
pH (s.u.)	7.81	7.27	8.36	7.46	8.48	8.24	7.01	7.64	--	7.47	7.92	7.81	7.11
Phosphorus	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	ND	ND	<0.074	<0.074	<0.13	<0.05
Potassium	0.4	<5	5	5	5	4	<1	ND	ND	<1.7	<1.7	<1.7	2
Scandium	<0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	ND	<0.002	<0.002	<0.002	<0.002
Selenium	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	--	<0.001	<0.001	<0.05	<0.01
Silver	<0.005	<0.01	<0.01	6	<0.01	<0.01	<0.01	ND	ND	<0.006	<0.006	<0.007	<0.005
Sodium	1.3	9	9	0.201	5	21	<1	1.8	3.4	1.71	2.03	1.38	3.9
Strontium	0.04	0.088	0.246	14	0.123	0.123	0.024	0.052	0.047	0.033	0.059	0.035	0.246
Sulfate	<5	9	10	<5	7	16	<5	ND	ND	0.7	1.2	0.4	8.8
Thallium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	<0.001	<0.001	<0.001	<0.001
Tin	<0.1	<0.03	<0.05	<0.05	<0.05	<0.03	0.06	ND	ND	<0.05	<0.05	<0.06	<0.01
Titanium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	<0.007	<0.007	<0.007	<0.005
Total Dissolved Solids	<5	50	120	66	72	126	17	35	36	11	25	32	78
Vanadium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	<0.005	<0.005	<0.007	<0.005
Zinc	<0.01	0.0	<0.02	<0.02	0.02	0.03	<0.02	ND	0.038	<0.003	<0.003	<0.003	0.005
Acid Base Accounting													
AGP (tons CaCO3/kton)	--	1.3	--	--	--	2.8	--	<0.3	0.31	<0.3	0.3	<0.3	<0.3
ANP (tons CaCO3/kton)	--	164	--	--	--	105	--	130	64	679	533	530	512
NNP (tons CaCO3/kton)		162.7				102.2		130	63.69	679	532.7	530	512
Paste pH (s.u.)	--	--	--	--	--	--	--	--	--	--	--	--	--

Humidity Cell Analytical Results, BIDA-07 / Q1, Sed (1.53 Kg)

Week	Vol. L	Effluent pH	Redox, mV (vs Ag/AgCl)	Conductivity mS/cm	Total Fe mg/l	Total Fe mg/kg	Total Fe Cum. mg/kg	$Fe^{2}+$ mg/l	$Fe^{3}+$ mg/l	SO_4= mg/l	SO_4= mg/kg	SO_4= Cum. mg/kg	Acidity, $CaCO_3$ Equivalents mg/l	Acidity, $CaCO_3$ Equivalents mg/kg	Acidity, $CaCO_3$ Equivalents Cum. mg/kg	Alkalinity, $CaCO_3$ mg/l	Alkalinity, $CaCO_3$ mg/kg	Alkalinity, $CaCO_3$ Cum. mg/kg
0	0.791	7.19	156	0.13	0.28	0.145	0.145	0.15	0.13	8.5	4.39	4.39	8.0	4.14	4.14	10.00	5.17	5.17
1	0.736	7.51	165	0.14	0.04	0.019	0.164	0.02	0.02	3.5	1.68	6.07	0.0	0.00	4.14	18.00	8.66	13.83
2	0.681	7.55	146	0.13	0.09	0.040	0.204	0.03	0.06	11.0	4.90	10.97	2.0	0.89	5.03	14.00	6.23	20.06
3	0.704	7.58	139	0.14	0.03	0.014	0.218	0.00	0.03	1.7	0.78	11.75	0.0	0.00	5.03	16.00	7.36	27.42
4	0.687	7.55	155	0.14	0.02	0.009	0.227	0.00	0.02	1.7	0.76	12.51	0.0	0.00	5.03	16.00	7.18	34.60
5	0.743	7.68	95	0.14	0.06	0.029	0.256	0.01	0.05	1.6	0.78	13.29	0.0	0.00	5.03	14.00	6.80	41.40
6	0.693	7.61	132	0.14	0.05	0.023	0.279	0.04	0.01	2.1	0.95	14.24	0.0	0.00	5.03	18.00	8.15	49.55
7	0.726	7.84	135	0.14	0.01	0.005	0.284	0.00	0.01	0.8	0.38	14.62	4.0	1.90	6.92	18.00	8.54	58.09
8	0.702	7.53	138	0.14	0.00	0.000	0.284	0.00	0.00	0.7	0.32	14.94	2.0	0.92	7.84	16.00	7.34	65.43
9	0.727	7.67	143	0.14	0.03	0.014	0.298	0.01	0.02	0.7	0.33	15.27	6.0	2.85	10.69	18.00	8.55	73.98
10	0.710	7.91	181	0.14	0.04	0.019	0.317	0.00	0.04	2.1	0.97	16.24	0.0	0.00	10.69	20.00	9.28	83.26
11	0.730	8.71	160	0.14	0.02	0.010	0.327	0.00	0.02	1.1	0.52	16.76	0.0	0.00	10.69	20.00	9.54	92.80
12	0.729	8.71	137	0.14	0.05	0.024	0.351	0.03	0.02	0.8	0.38	17.14	0.0	0.00	10.69	20.00	9.53	102.33
13	0.704	8.38	111	0.14	0.05	0.023	0.374	0.03	0.02	3.8	1.75	18.89	0.0	0.00	10.69	16.00	7.36	109.69
14	0.723	8.39	95	0.14	0.03	0.014	0.388	0.02	0.01	0.5	0.24	19.13	0.0	0.00	10.69	16.00	7.56	117.25
15	0.748	8.34	154	0.14	0.04	0.020	0.408	0.02	0.02	1.4	0.68	19.81	0.0	0.00	10.69	20.00	9.78	127.03
16	0.688	8.07	110	0.13	0.01	0.004	0.412	0.00	0.01	0.5	0.22	20.03	4.0	1.80	12.49	14.00	6.30	133.33
17	0.691	7.87	176	0.12	0.08	0.036	0.448	0.01	0.07	2.1	0.95	20.98	0.0	0.00	12.49	16.00	7.23	140.56
18	0.632	8.15	146	0.13	0.07	0.029	0.477	0.02	0.05	1.2	0.50	21.48	0.0	0.00	12.49	16.00	6.61	147.17
19	0.665	7.76	156	0.13	0.08	0.035	0.512	0.03	0.05	2.3	1.00	22.48	0.0	0.00	12.49	16.00	6.95	154.12
20	0.665	7.82	175	0.12	0.38	0.165	0.677	0.29	0.09	12.3	5.35	27.83	2.0	0.87	13.36	14.00	6.08	160.20

ENDED

Profile I Analytical Results, Humidity Cell Extracts,
Bald Mountain BIDA-07/Q1, SED

	Extract					
Analysis, mg/L	Week 0	Weeks 1-4	Weeks 5-8	Weeks 9-12	Weeks 13-16	Weeks 17-20
Alkalinity, $CaCO_3$	15.4	17.6	19.3	19.8	17.0	15.3
CO_3, $CaCO_3$	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
HCO_3	15.4	17.6	19.3	19.8	17.0	15.3
Aluminum	0.12	0.09	0.11	<0.080	<0.080	0.237
Antimony	<0.0030	<0.0030	<0.0030	<0.00300	<0.00300	<0.00300
Arsenic	0.0235	0.0343	0.0341	0.0345	0.0329	0.0285
Barium	0.215	0.196	0.0914	0.0393	0.0346	0.144
Beryllium	<0.0020	<0.0020	<0.0020	<0.00200	<0.00200	<0.00200
Boron	0.386	1.02	1.17	1.12	1.03	0.930
Cadmium	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Calcium	3.42	1.5	1.32	1.15	0.915	0.734
Chloride	2.98	0.57	0.30	<0.200	0.320	<0.200
Chromium	<0.006	<0.006	<0.006	<0.0060	<0.0060	<0.0060
Copper	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluoride	0.72	0.72	0.710	0.726	0.736	0.704
Iron	<0.06	<0.06	<0.06	<0.06	<0.060	<0.060
Lead	<0.0030	<0.0030	<0.0030	<0.0030	<0.00300	<0.00300
Magnesium	0.28	0.21	0.19	0.171	0.167	0.127
Manganese	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0043
Mercury	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Nickel	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate & Nitrite as N	0.74	0.15	0.056	0.0419	0.0558	0.0717
pH, stu	6.6	7.8	7.11	7.33	6.52	6.23
Potassium	0.69	0.58	0.57	<0.50	<0.50	<0.50
Selenium	<0.0030	<0.0030	<0.0030	<0.0030	<0.00300	<0.00300
Silver	<0.005	<0.005	<0.005	<0.005	<0.0050	<0.0050
Sodium	11.3	10	8.90	8.26	7.67	9.27
Sulfate	13.2	7.19	2.67	2.20	1.92	4.61
Thallium	<0.00200	<0.00200	<0.00100	<0.00100	<0.00100	<0.00100
Total Dissolved Solids	48	49	29	31	46	51
Zinc	<0.010	<0.010	0.016	<0.010	<0.0100	<0.0100
Cations, meq/L	0.71	0.55	0.50	0.74	0.68	0.48
Anions, meq/L	0.75	0.57	0.50	0.48	0.43	0.47
Balance, %	-2.74	-1.79	0.00	21.19	22.32	1.41
SVL ID #	129595	130179	130776	W700972	W701470	W702043

Humidity Cell Analytical Results, BIDA-Int Q4 (1.832 Kg)

					Total Fe					SO_4=			Acidity, $CaCO_3$ Equivalents			Alkalinity, $CaCO_3$		
	Vol.	Effluent	Redox, mV	Conductivity			Cum.	$Fe^{2}+$	$Fe^{3}+$			Cum.			Cum.			Cum.
	L	pH	(vs Ag/AgCl)	mS/cm	mg/l	mg/kg	mg/kg	mg/l	mg/l	mg/l	mg/kg	mg/kg	mg/l	mg/kg	mg/kg	mg/l	mg/kg	mg/kg
Week																		
0	0.737	7.57	160	0.12	0.02	0.008	0.008	0.01	0.01	1.5	0.60	0.60	2.0	0.81	0.81	8.00	3.22	3.22
1	0.717	7.24	147	0.13	0.00	0.000	0.008	0.00	0.00	1.3	0.51	1.11	6.0	2.35	3.15	12.00	4.70	7.92
2	0.731	7.95	107	0.14	0.00	0.000	0.008	0.00	0.00	0.9	0.36	1.47	2.0	0.80	3.95	18.00	7.18	15.10
3	0.718	7.97	188	0.14	0.00	0.000	0.008	0.00	0.00	7.7	3.02	4.49	4.0	1.57	5.52	16.00	6.27	21.37
4	0.726	7.67	122	0.14	0.00	0.000	0.008	0.00	0.00	2.2	0.87	5.36	0.0	0.00	5.52	16.00	6.34	27.71
5	0.699	7.57	102	0.14	0.00	0.000	0.008	0.00	0.00	1.3	0.50	5.86	0.0	0.00	5.52	18.00	6.87	34.58
6	0.706	7.38	116	0.13	0.02	0.008	0.016	0.01	0.01	1.5	0.58	6.44	0.0	0.00	5.52	16.00	6.17	40.75
7	0.722	7.37	108	0.13	0.03	0.012	0.028	0.00	0.03	0.5	0.20	6.64	0.0	0.00	5.52	18.00	7.09	47.84
8	0.714	7.58	109	0.13	0.01	0.004	0.032	0.00	0.01	1.0	0.39	7.03	0.0	0.00	5.52	14.00	5.46	53.30
9	0.710	7.43	117	0.13	0.04	0.016	0.048	0.00	0.04	0.2	0.08	7.11	0.0	0.00	5.52	18.00	6.98	60.28
10	0.724	7.84	115	0.13	0.01	0.004	0.052	0.00	0.01	0.6	0.24	7.35	0.0	0.00	5.52	18.00	7.11	67.39
11	0.688	7.96	100	0.13	0.01	0.004	0.056	0.00	0.01	0.5	0.19	7.54	2.0	0.75	6.27	14.00	5.26	72.65
12	0.742	8.18	73	0.13	0.04	0.016	0.072	0.00	0.04	0.4	0.16	7.70	0.0	0.00	6.27	18.00	7.29	79.94
13	0.662	7.78	103	0.13	0.00	0.000	0.072	0.00	0.00	0.5	0.18	7.88	6.0	2.17	8.44	16.00	5.78	85.72
14	0.686	7.70	142	0.13	0.02	0.007	0.079	0.00	0.02	1.1	0.41	8.29	6.0	2.25	10.69	16.00	5.99	91.71
15	0.664	7.87	110	0.13	0.01	0.004	0.083	0.00	0.01	0.3	0.11	8.40	8.0	2.90	13.59	18.00	6.52	98.23
16	0.673	7.90	134	0.13	0.02	0.007	0.090	0.00	0.02	0.5	0.18	8.58	6.0	2.20	15.79	12.00	4.41	102.64
17	0.748	7.66	135	0.13	0.02	0.008	0.098	0.00	0.02	0.6	0.25	8.83	6.0	2.45	18.24	14.00	5.72	108.36
18	0.705	7.93	81	0.13	0.13	0.050	0.148	0.01	0.12	0.4	0.15	8.98	6.0	2.31	20.55	14.00	5.39	113.75
19	0.698	7.70	103	0.13	0.01	0.004	0.152	0.00	0.01	1.1	0.42	9.40	6.0	2.29	22.84	14.00	5.33	119.08
20	0.690	7.86	113	0.13	0.01	0.004	0.156	0.01	0.00	0.0	0.00	9.40	2.0	0.75	23.59	14.00	5.27	124.35
21	0.724	8.09	125	0.13	0.01	0.004	0.160	0.00	0.01	0.0	0.00	9.40	0.0	0.00	23.59	18.00	7.11	131.46
22	0.645	7.87	119	0.13	0.00	0.000	0.160	0.00	0.00	0.2	0.07	9.47	6.0	2.11	25.70	12.00	4.23	135.69

Humidity Cell Analytical Results, SAGA Waste - 6975 (1.794 Kg)

Week	Vol. L	Effluent pH	Redox, mV (vs Ag/AgCI)	Conductivity mS/cm	Total Fe mg/l	Total Fe mg/kg	Total Fe Cum. mg/kg	$Fe^{2}+$ mg/l	$Fe^{3}+$ mg/l	SO_4= mg/l	SO_4= mg/kg	SO_4= Cum. mg/kg	Acidity, $CaCO_3$ Equivalents mg/l	Acidity, $CaCO_3$ Equivalents mg/kg	Acidity, $CaCO_3$ Equivalents Cum. mg/kg	Alkalinity, $CaCO_3$ mg/l	Alkalinity, $CaCO_3$ mg/kg	Alkalinity, $CaCO_3$ Cum. mg/kg
0	0.679	8.07	90	0.20	0.05	0.019	0.019	0.05	0.00	10.0	3.78	3.78	0.0	0.00	0.00	324.00	122.63	122.63
1	0.676	9.53	141	0.18	0.62	0.234	0.253	0.05	0.57	10.0	3.77	7.55	0.0	0.00	0.00	42.00	15.83	138.46
2	0.703	8.37	118	0.16	0.07	0.027	0.280	0.03	0.04	4.6	1.80	9.35	0.0	0.00	0.00	42.00	16.46	154.92
3	0.691	8.45	145	0.17	0.09	0.035	0.315	0.03	0.06	1.8	0.69	10.04	0.0	0.00	0.00	42.00	16.18	171.10
4	0.678	8.32	114	0.16	0.10	0.038	0.353	0.06	0.04	2.0	0.76	10.80	0.0	0.00	0.00	46.00	17.38	188.48
5	0.681	8.29	154	0.16	0.11	0.042	0.395	0.04	0.07	2.7	1.02	11.82	0.0	0.00	0.00	42.00	15.94	204.42
6	0.590	7.96	179	0.17	0.14	0.046	0.441	0.07	0.07	9.3	3.06	14.88	0.0	0.00	0.00	94.00	30.91	235.33
7	0.669	7.51	159	0.17	0.36	0.134	0.575	0.08	0.28	6.9	2.57	17.45	0.0	0.00	0.00	60.00	22.37	257.70
8	0.689	7.46	151	0.16	3.56	1.367	1.942	0.14	3.42	22.7	8.72	26.17	0.0	0.00	0.00	42.00	16.13	273.83
9	0.699	7.27	144	0.16	0.10	0.039	1.981	0.05	0.05	4.1	1.60	27.77	0.0	0.00	0.00	56.00	21.82	295.65
10	0.718	7.66	163	0.17	0.09	0.036	2.017	0.04	0.05	3.6	1.44	29.21	0.0	0.00	0.00	58.00	23.21	318.86
11	0.749	7.63	152	0.17	0.12	0.050	2.067	0.10	0.02	4.9	2.05	31.26	0.0	0.00	0.00	60.00	25.05	343.91
12	0.706	7.47	131	0.15	0.10	0.039	2.106	0.04	0.06	2.2	0.87	32.13	0.0	0.00	0.00	54.00	21.25	365.16
13	0.659	7.54	146	0.16	0.41	0.151	2.257	0.11	0.30	8.2	3.01	35.14	0.0	0.00	0.00	60.00	22.04	387.20
14	0.684	7.46	160	0.15	0.09	0.034	2.291	0.06	0.03	2.5	0.95	36.09	0.0	0.00	0.00	48.00	18.30	405.50
15	0.706	7.52	138	0.15	0.09	0.035	2.326	0.09	0.00	2.3	0.91	37.00	0.0	0.00	0.00	42.00	16.53	422.03
16	0.661	7.47	158	0.14	0.14	0.052	2.378	0.07	0.07	2.2	0.81	37.81	0.0	0.00	0.00	56.00	20.63	442.66
17	0.702	7.31	153	0.15	0.20	0.078	2.456	0.06	0.14	7.6	2.97	40.78	0.0	0.00	0.00	42.00	16.43	459.09
18	0.663	7.29	148	0.15	0.05	0.018	2.474	0.03	0.02	33.7	12.45	53.23	0.0	0.00	0.00	60.00	22.17	481.26
19	0.702	7.29	144	0.16	0.19	0.074	2.548	0.04	0.15	5.4	2.11	55.34	0.0	0.00	0.00	64.00	25.04	506.30
20	0.613	7.63	178	0.17	0.05	0.017	2.565	0.05	0.00	3.4	1.16	56.50	0.0	0.00	0.00	70.00	23.92	530.22
	ENDED																	

Profile I Analytical Results, Humidity Cell Extracts,
Bald Mountain Saga Waste - 6975

	Extract					
Analysis, mg/L	Week 0	Weeks 1-4	Weeks 5-8	Weeks 9-12	Weeks 13-16	Weeks 17-20
Alkalinity, $CaCO_3$	55.8	38.9	36.8	45.7	42.2	39.3
CO_3, $CaCO_3$	<1.0	8.1	<1.0	<1.0	<1.0	<1.0
HCO_3	55.8	30.8	<1.0	45.7	42.2	39.3
Aluminum	<0.080	0.327	0.951	0.213	0.153	0.126
Antimony	0.0122	0.00929	0.00990	0.00875	0.00678	0.0104
Arsenic	0.0435	0.0429	0.0398	0.0406	0.0298	0.0355
Barium	0.279	0.158	0.165	0.153	0.151	0.145
Beryllium	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Boron	0.168	1.07	1.11	1.45	0.997	1.08
Cadmium	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Calcium	19.2	6.93	7.17	8.39	6.72	7.29
Chloride	2.84	1.33	0.363	<0.200	<0.200	<0.200
Chromium	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Copper	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluoride	1.04	0.843	0.899	0.989	0.714	0.977
Iron	<0.060	0.131	0.164	0.062	0.064	<0.060
Lead	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300
Magnesium	3.17	1.19	1.30	1.22	1.07	1.21
Manganese	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Mercury	0.00066	0.0003	0.00052	0.00022	<0.00020	<0.00020
Nickel	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate & Nitrite as N	6.38	1.52	1.74	1.03	0.444	0.196
pH, stu	7.35	8.72	7.20	7.70	7.85	6.60
Potassium	4.87	2.11	2.24	1.70	1.30	1.39
Selenium	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300
Silver	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium	11.8	12.1	11.3	11.8	8.08	8.77
Sulfate	11.9	5.47	4.27	2.84	1.84	2.76
Thallium	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Total Dissolved Solids	100	78	85	81	96	78
Zinc	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Cations, meq/L	1.91	1.36	1.12	1.10	0.83	0.90
Anions, meq/L	1.95	1.08	1.03	1.13	0.97	0.93
Balance, %	-1.18	11.39	4.17	-1.24	-8.01	-2.01
SVL ID #	W701261	W701664	W702190	W702657	W703192	W800335

Humidity Cell Analytical Results, SWF-SED-OX (1.53 Kg)

Week	Vol. L	Effluent pH	Redox, mV (vs Ag/AgCI)	Conductivity mS/cm	Total Fe mg/l	Total Fe mg/kg	Total Fe Cum. mg/kg	Fe2+ mg/l	Fe3+ mg/l	SO4= mg/l	SO4= mg/kg	SO4= Cum. mg/kg	Acidity, CaCO3 mg/l	Acidity, CaCO3 mg/kg	Acidity, CaCO3 Cum. mg/kg	Alkalinity, CaCO3 mg/l	Alkalinity, CaCO3 mg/kg	Alkalinity, CaCO3 Cum. mg/kg
0	0.741	5.45	138	0.15	0.64	0.309	0.309	0.25	0.39	11.0	5.31	5.31	8.0	3.87	3.87	8.00	3.86	3.86
1	0.710	7.04	163	0.13	0.16	0.074	0.383	0.07	0.09	5.5	2.55	7.86	4.0	1.85	5.72	8.00	3.70	7.56
2	0.642	7.04	131	0.15	0.25	0.105	0.488	0.09	0.16	12.5	5.23	13.09	2.0	0.84	6.55	14.00	5.86	13.42
3	0.711	7.11	141	0.15	0.32	0.148	0.636	0.13	0.19	8.5	3.94	17.03	0.0	0.00	6.55	18.00	8.34	21.76
4	0.730	6.89	127	0.14	0.50	0.238	0.874	0.31	0.19	14.1	6.71	23.74	0.0	0.00	6.55	18.00	8.57	30.33
5	0.665	6.84	126	0.15	0.19	0.082	0.956	0.12	0.07	8.3	3.60	27.34	2.0	0.87	7.42	16.00	6.94	37.27
6	0.635	7.23	200	0.15	0.32	0.132	1.088	0.23	0.09	12.8	5.30	32.64	0.0	0.00	7.42	18.00	7.45	44.72
7	0.691	6.97	236	0.14	0.37	0.167	1.255	0.23	0.14	9.5	4.28	36.92	0.0	0.00	7.42	18.00	8.11	52.83
8	0.685	7.43	200	0.14	0.47	0.210	1.465	0.21	0.26	9.2	4.11	41.03	0.0	0.00	7.42	18.00	8.04	60.87
9	0.728	8.02	198	0.13	0.52	0.247	1.712	0.22	0.30	10.0	4.75	45.78	4.0	1.90	9.32	12.00	5.70	66.57
10	0.578	8.51	233	0.13	0.42	0.158	1.870	0.25	0.17	10.4	3.92	49.70	0.0	0.00	9.32	16.00	6.03	72.60
10	0.578	8.51	233	0.13	0.42	0.158	1.87	0.25	0.17	10.4	3.92	49.7	0.0	0.0	9.32	16	6.03	72.6
11	0.724	8.27	223	0.13	0.58	0.274	2.144	0.21	0.37	9.6	4.53	54.23	0.0	0.0	9.32	14	6.61	79.21
12	0.682	7.82	207	0.14	0.15	0.067	2.211	0.11	0.04	5.6	2.49	56.72	0.0	0.0	9.32	12	5.34	84.55
13	0.643	7.31	205	0.14	0.26	0.109	2.32	0.14	0.12	10.2	4.28	61	0.0	0.0	9.32	12	5.03	89.58
14	0.697	7.67	156	0.13	0.27	0.123	2.443	0.16	0.11	8.9	4.04	65.04	0.0	0.0	9.32	14	6.36	95.94
15	0.681	8.23	238	0.13	0.48	0.213	2.656	0.26	0.22	11.1	4.93	69.97	0.0	0.0	9.32	14	6.22	102.2
16	0.727	8.07	203	0.15	0.43	0.204	2.86	0.25	0.18	10.7	5.07	75.04	0.0	0.0	9.32	12	5.69	107.9
17	0.655	8.22	190	0.13	0.27	0.115	2.975	0.12	0.15	9.6	4.1	79.14	0.0	0.0	9.32	12	5.12	113
18	0.646	8.32	196	0.13	0.24	0.101	3.076	0.19	0.05	9.7	4.09	83.23	0.0	0.0	9.32	12	5.05	118
19	0.693	7.99	203	0.14	0.27	0.122	3.198	0.18	0.09	6.7	3.03	86.26	0.0	0.0	9.32	16	7.23	125.3
20	0.696	7.58	210	0.13	0.18	0.082	3.28	0.08	0.1	6.2	2.81	89.07	0.0	0.0	9.32	12	5.45	130.7

END

Profile I Analytical Results, Humidity Cell Extract, Bald Mountain SWF-SED-OX

	Extract Week					
Analysis, mg/L	Week 0	Weeks 1-4	Weeks 5-8	Weeks 9-12	Weeks 13-16	Weeks 17-20
Alkalinity, $CaCO_3$	12	11.0	16.5	12.1	11.8	10.4
CO_3, $CaCO_3$	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
HCO_3	12	11.0	16.5	12.1	11.8	10.4
Aluminum	6.64	2.49	6.59	0.926	2.4	2.03
Antimony	0.00304	<0.00300	0.00427	<0.00300	<0.00300	<0.00300
Arsenic	0.0378	0.0201	0.0522	0.0194	0.0199	0.0225
Barium	0.346	0.303	0.388	0.189	0.4	0.342
Beryllium	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Boron	0.52	0.092	0.112	0.042	0.092	0.086
Cadmium	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Calcium	6.21	4.76	5.08	3.97	4.28	4.09
Chloride	2.25	0.998	0.246	<0.200	0.341	0.229
Chromium	0.0102	<0.0060	0.0087	<0.0060	<0.0060	<0.0060
Copper	0.012	<0.010	<0.010	<0.010	<0.010	<0.010
Fluoride	0.613	0.276	0.305	0.224	0.213	0.12
Iron	1.99	0.856	2.63	0.354	0.855	0.717
Lead	<0.00300	<0.00300	0.00334	<0.00300	<0.00300	<0.00300
Magnesium	2.04	1.17	1.81	0.760	0.986	0.917
Manganese	0.0057	0.0055	0.0114	0.0047	0.0041	0.0113
Mercury	0.00032	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Nickel	0.017	<0.010	0.023	<0.010	<0.010	<0.010
Nitrate / Nitrite as N	1.44	0.495	0.0819	<0.0500	<0.0500	<0.0500
pH, stu	6.13	6.60	7.15	7.54	6.32	7.04
Potassium	4.03	1.64	3.14	0.91	1.39	1.35
Selenium	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300
Silver	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium	19.9	5.59	4.93	1.82	3.92	3.51
Sulfate	45.3	12.0	12.5	6.73	9.92	8.56
Thallium	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Total Dissolved Solids	79	120	130	63	100	88
Zinc	0.0581	0.0362	0.0738	0.0160	0.0244	0.0224
Cations, meq/L	2.26	0.93	1.53	0.48	0.81	0.72
Anions, meq/L	1.39	0.55	0.62	0.39	0.47	0.40
Balance, %	23.80	25.80	42.32	9.98	26.74	28.75
SVL Report#	W801779	W802503	W803228	W803881	W804595	W8I0021

Humidity Cell Analytical Results, SG-1009 50-100 (1.444 Kg)

					Total Fe					SO_4=			Acidity, $CaCO_3$ Equivalents			Alkalinity, $CaCO_3$ Equivalent		
Week	Vol. L	Effluent pH	Redox, mV (vs Ag/AgCI)	Conductivity mS/cm	mg/l	mg/kg	Cum. mg/kg	Fe^{2}+ mg/l	Fe^{3}+ mg/l	mg/l	mg/kg	Cum. mg/kg	mg/l	mg/kg	Cum. mg/kg	mg/l	mg/kg	Cum. mg/kg
0	0.758	8.35	183	0.26	0.04	0.021	0.021	0.02	0.02	48.5	25.46	25.46	0.0	0.00	0.00	52.00	27.30	27.30
1	0.741	8.10	202	0.19	0.03	0.015	0.036	0.01	0.02	16.5	8.47	33.93	0.0	0.00	0.00	54.00	27.71	55.01
2	0.814	8.14	208	0.17	0.13	0.073	0.109	0.04	0.09	9.4	5.30	39.23	0.0	0.00	0.00	26.00	14.66	69.67
3	0.696	8.53	210	0.15	0.03	0.014	0.123	0.02	0.01	4.0	1.93	41.16	0.0	0.00	0.00	32.00	15.42	85.09
4	0.742	8.17	229	0.16	0.08	0.041	0.164	0.02	0.06	3.6	1.85	43.01	0.0	0.00	0.00	36.00	18.50	103.59
5	0.750	8.19	232	0.16	0.06	0.031	0.195	0.01	0.05	2.5	1.30	44.31	0.0	0.00	0.00	36.00	18.70	122.29
6	0.755	7.98	245	0.15	0.03	0.016	0.211	0.03	0.00	4.5	2.35	46.66	0.0	0.00	0.00	32.00	16.73	139.02
7	0.781	7.95	224	0.16	0.06	0.032	0.243	0.01	0.05	2.4	1.30	47.96	0.0	0.00	0.00	36.00	19.47	158.49
8	0.678	8.01	270	0.15	0.10	0.047	0.290	0.00	0.10	0.9	0.42	48.38	0.0	0.00	0.00	36.00	16.90	175.39
9	0.726	8.11	261	0.15	0.02	0.010	0.300	0.00	0.02	0.8	0.40	48.78	0.0	0.00	0.00	32.00	16.09	191.48
10	0.683	8.17	293	0.14	0.04	0.019	0.319	0.00	0.04	0.5	0.24	49.02	0.0	0.00	0.00	30.00	14.19	205.67
11	0.740	8.22	233	0.14	0.00	0.000	0.319	0.00	0.00	1.1	0.56	49.58	0.0	0.00	0.00	32.00	16.40	222.07
12	0.651	8.43	229	0.15	0.13	0.059	0.378	0.03	0.10	1.4	0.63	50.21	0.0	0.00	0.00	30.00	13.52	235.59
13	0.723	8.32	219	0.15	0.03	0.015	0.393	0.01	0.02	1.5	0.75	50.96	0.0	0.00	0.00	34.00	17.02	252.61
14	0.722	8.38	212	0.15	0.04	0.020	0.413	0.01	0.03	0.4	0.20	51.16	0.0	0.00	0.00	34.00	17.00	269.61
15	0.732	8.25	237	0.15	0.04	0.020	0.433	0.03	0.01	1.0	0.51	51.67	0.0	0.00	0.00	34.00	17.24	286.85
16	0.811	8.34	225	0.15	0.11	0.062	0.495	0.02	0.09	1.4	0.79	52.46	0.0	0.00	0.00	36.00	20.22	307.07
17	0.628	8.45	208	0.15	0.19	0.083	0.578	0.01	0.18	1.7	0.74	53.20	0.0	0.00	0.00	32.00	13.92	320.99
18	0.703	8.21	201	0.15	0.05	0.024	0.602	0.02	0.03	1.1	0.54	53.74	0.0	0.00	0.00	32.00	15.58	336.57
19	0.689	8.05	192	0.15	0.05	0.024	0.626	0.01	0.04	0.5	0.24	53.98	0.0	0.00	0.00	30.00	14.31	350.88
20	0.734	8.39	189	0.15	0.05	0.025	0.651	0.01	0.04	0.3	0.15	54.13	0.0	0.00	0.00	32.00	16.27	367.15
21	0.666	8.32	181	0.15	0.07	0.032	0.683	0.02	0.05	0.7	0.32	54.45	0.0	0.00	0.00	28.00	12.91	380.06
22	0.798	8.11	182	0.15	0.05	0.028	0.711	0.01	0.04	0.3	0.17	54.62	0.0	0.00	0.00	28.00	15.47	395.53
23	0.683	8.18	176	0.15	0.06	0.028	0.739	0.03	0.03	0.9	0.43	55.05	0.0	0.00	0.00	28.00	13.24	408.77
24	0.711	8.50	191	0.15	0.08	0.039	0.778	0.01	0.07	0.9	0.44	55.49	0.0	0.00	0.00	28.00	13.79	422.56
25	0.716	8.21	177	0.15	0.05	0.025	0.803	0.00	0.05	0.3	0.15	55.64	0.0	0.00	0.00	28.00	13.88	436.44
26	0.747	8.12	186	0.15	0.07	0.036	0.839	0.03	0.04	0.1	0.05	55.69	0.0	0.00	0.00	28.00	14.48	450.92

Profile II Analytical Results, Humidity Cell Extracts,
Bald Mountain ARD Study, SG-1009 50'-100'

	Extract						
Analysis, mg/L	Week 0	Wks 1-4	Wks 5-8	Wks 9-12	Wks 13-16	Wks 17-20	Wks 21-24
Alkalinity, $CaCO_3$	45.9	38.1	31.7	28.6	33.4	28.6	23.5
CO_3, $CaCO_3$	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
HCO_3	45.9	38.1	31.7	28.6	33.4	28.6	23.5
Aluminum	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
Antimony	0.0598	0.0555	0.0444	0.0263	0.0249	0.0176	0.014
Arsenic	0.0948	0.104	0.0953	0.0622	0.066	0.0519	0.0425
Barium	0.183	0.17	0.381	0.502	0.573	0.583	0.593
Beryllium	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Bismuth	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Boron	0.057	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Cadmium	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Calcium	14.3	8.77	11	8.84	10.5	9.5	8.48
Chloride	5.36	0.553	<0.200	0.318	0.26	<0.200	<0.200
Chromium	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Cobalt	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Copper	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluoride	1.77	0.268	0.141	0.116	<0.100	<0.100	<0.100
Gallium	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Iron	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Lead	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300
Lithium	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Magnesium	1.25	0.896	0.69	0.45	0.421	0.323	0.292
Manganese	0.0044	0.0063	0.0118	<0.0040	<0.0040	<0.0040	<0.0040
Mercury	0.00092	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Molybdenum	0.0414	0.0498	0.0189	0.0093	<0.0080	<0.0080	<0.0080
Nickel	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate/Nitrite as N	0.395	<0.0500	<0.0500	<0.0500	<0.0500	0.164	0.704
pH, stu	7.92	7.77	7.69	7.39	7.54	6.94	7.27
Phosphorus	0.095	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	2.98	0.58	<0.50	<0.50	<0.50	<0.50	<0.50
Scandium	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Selenium	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Silver	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium	35.8	7.01	1.16	0.97	<0.50	<0.50	<0.50
Strontium	0.0403	0.039	0.0434	0.0368	0.0366	0.0302	0.0254
Sulfate	59.9	11.8	3.33	3.38	1.96	1.68	1.51
Thallium	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Tin	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Titanium	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Dissolved Solids	160	80	70	23	43	44	48
Vanadium	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zinc	<0.0100	0.013	0.0122	<0.0100	<0.0100	<0.0100	<0.0100
Cations, meq/L	2.46	0.84	0.67	0.53	0.57	0.51	0.46
Anions, meq/L	2.44	1.04	0.71	0.66	0.72	0.62	0.55
Balance, %	0.43	-10.59	-3.14	-10.61	-11.31	-9.49	-9.28
SVL Report #	W8J0492	W8K0395	W8L0308	W9A0143	W9B0138	W9C0158	W9D0158

Humidity Cell Analytical Results, SG-1043, 40-80 (1.446 Kg)

					Total Fe					SO_4=			Acidity, as $CaCO_3$			Alkalinity, as $CaCO_3$		
Week	Vol. L	Effluent pH	Redox, mV (vs Ag/AgCI)	Conductivity mS/cm	mg/l	mg/kg	Cum. mg/kg	Fe^{2}+ mg/l	Fe^{3}+ mg/l	mg/l	mg/kg	Cum. mg/kg	mg/l	mg/kg	Cum. mg/kg	mg/l	mg/kg	Cum. mg/kg
0	0.512	7.95	195	0.24	0.08	0.028	0.028	0.04	0.04	33.3	11.79	11.79	0.0	0.00	0.00	60.00	21.24	21.24
1	0.504	7.85	243	0.16	0.03	0.010	0.038	0.02	0.01	6.7	2.34	14.13	0.0	0.00	0.00	24.00	8.37	29.61
2	0.584	7.88	245	0.16	0.06	0.024	0.062	0.02	0.04	8.9	3.59	17.72	0.0	0.00	0.00	26.00	10.50	40.11
3	0.762	8.22	245	0.17	0.02	0.011	0.073	0.02	0.00	6.5	3.43	21.15	0.0	0.00	0.00	30.00	15.81	55.92
4	0.807	8.01	257	0.15	0.12	0.067	0.140	0.01	0.11	4.7	2.62	23.77	0.0	0.00	0.00	20.00	11.16	67.08
5	0.690	8.08	240	0.15	0.03	0.014	0.154	0.03	0.00	4.4	2.10	25.87	0.0	0.00	0.00	22.00	10.50	77.58
6	0.658	7.95	255	0.15	0.00	0.000	0.154	0.00	0.00	0.7	0.32	26.19	0.0	0.00	0.00	18.00	8.19	85.77
7	0.746	7.80	235	0.15	0.04	0.021	0.175	0.00	0.04	4.2	2.17	28.36	0.0	0.00	0.00	22.00	11.35	97.12
8	0.699	7.72	286	0.15	0.05	0.024	0.199	0.02	0.03	2.2	1.06	29.42	0.0	0.00	0.00	24.00	11.60	108.72
9	0.691	7.72	286	0.12	0.05	0.024	0.223	0.02	0.03	1.5	0.72	30.14	0.0	0.00	0.00	16.00	7.65	116.37
10	0.653	7.93	242	0.12	0.02	0.009	0.232	0.01	0.01	1.0	0.45	30.59	0.0	0.00	0.00	12.00	5.42	121.79
11	0.754	7.97	248	0.14	0.03	0.016	0.248	0.01	0.02	2.0	1.04	31.63	0.0	0.00	0.00	16.00	8.34	130.13
12	0.655	7.91	257	0.10	0.07	0.032	0.280	0.02	0.05	1.0	0.45	32.08	0.0	0.00	0.00	6.00	2.72	132.85
13	0.693	7.76	253	0.12	0.01	0.005	0.285	0.01	0.00	0.9	0.43	32.51	0.0	0.00	0.00	8.00	3.83	136.68
14	0.740	7.88	245	0.12	0.04	0.020	0.305	0.02	0.02	1.3	0.67	33.18	0.0	0.00	0.00	12.00	6.14	142.82
15	0.695	7.91	270	0.11	0.01	0.005	0.310	0.00	0.01	1.1	0.53	33.71	0.0	0.00	0.00	10.00	4.81	147.63
16	0.711	8.04	253	0.12	0.04	0.020	0.330	0.04	0.00	1.3	0.64	34.35	0.0	0.00	0.00	12.00	5.90	153.53
17	0.688	8.10	254	0.12	0.04	0.019	0.349	0.01	0.03	3.7	1.76	36.11	0.0	0.00	0.00	12.00	5.71	159.24
18	0.712	7.71	216	0.12	0.06	0.030	0.379	0.03	0.03	1.0	0.49	36.60	0.0	0.00	0.00	8.00	3.94	163.18
19	0.695	7.56	230	0.10	0.04	0.019	0.398	0.01	0.03	0.8	0.38	36.98	0.0	0.00	0.00	6.00	2.88	166.06
20	0.688	7.91	232	0.08	0.05	0.024	0.422	0.01	0.04	2.0	0.95	37.93	0.0	0.00	0.00	4.00	1.90	167.96
21	0.684	8.23	233	0.07	0.03	0.014	0.436	0.02	0.01	1.3	0.61	38.54	0.0	0.00	0.00	4.00	1.89	169.85
22	0.728	8.15	234	0.08	0.03	0.015	0.451	0.00	0.03	0.1	0.05	38.59	0.0	0.00	0.00	4.00	2.01	171.86
23	0.672	7.99	220	0.08	0.08	0.037	0.488	0.04	0.04	1.3	0.60	39.19	0.0	0.00	0.00	4.00	1.86	173.72
24	0.663	8.03	231	0.09	0.20	0.092	0.580	0.09	0.11	4.6	2.11	41.30	0.0	0.00	0.00	8.00	3.67	177.39
25	0.666	8.03	249	0.07	0.07	0.032	0.612	0.03	0.04	1.1	0.51	41.81	0.0	0.00	0.00	6.00	2.76	180.15
26	0.679	8.07	249	0.08	0.00	0.000	0.612	0.00	0.00	6.9	3.24	45.05	0.0	0.00	0.00	4.00	1.88	182.03

Profile II Analytical Results, Humidity Cell Extracts,
Bald Mountain ARD Study, SG-1043 40'-80'

	Extract						
Analysis, mg/L	Week 0	Wks 1-4	Wks 5-8	Wks 9-12	Wks 13-16	Wks 17-20	Wks 21-24
Alkalinity, $CaCO_3$	45.3	27.4	19.7	12.2	11.6	6.8	4
CO_3, $CaCO_3$	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
HCO_3	45.3	27.4	19.7	<1.0	<1.0	6.8	4
Aluminum	0.168	<0.080	0.194	0.294	<0.080	<0.080	0.496
Antimony	0.0083	0.00311	0.00368	<0.00300	<0.00300	<0.00300	0.00412
Arsenic	0.0227	0.0139	0.00979	0.00787	0.00652	0.00537	0.0109
Barium	0.277	0.301	0.372	0.291	0.229	0.249	0.26
Beryllium	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Bismuth	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Boron	0.162	<0.040	<0.040	<0.040	<0.040	<0.040	0.041
Cadmium	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Calcium	15.2	6.53	6.12	3.21	3.01	2.05	1.31
Chloride	9.34	2.5	1.38	0.212	0.552	0.244	<0.200
Chromium	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Cobalt	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Copper	<0.010	<0.010	0.017	<0.010	0.017	<0.010	<0.010
Fluoride	1.27	0.466	0.358	0.196	0.112	0.103	<0.100
Gallium	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Iron	<0.060	<0.060	0.064	0.092	<0.060	<0.060	0.389
Lead	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300
Lithium	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Magnesium	2.29	0.951	0.842	0.441	0.417	0.257	0.186
Manganese	0.024	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Mercury	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Molybdenum	0.0276	0.0178	0.013	<0.0080	<0.0080	<0.0080	<0.0080
Nickel	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate/Nitrite as N	0.782	<0.0500	0.0659	<0.0500	0.0623	0.146	0.226
pH, stu	7.79	7.36	7.35	7.07	6.96	6.38	6.59
Phosphorus	0.865	0.139	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	7.18	3.03	2.5	1.09	1.09	0.89	<0.50
Scandium	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Selenium	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Silver	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium	22.3	5.81	3.68	2.05	1.22	0.65	1.53
Strontium	0.0804	0.0429	0.0387	0.0226	0.0192	0.0135	0.0164
Sulfate	38.5	10.5	5.75	3.96	2.32	1.7	2.7
Thallium	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Tin	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Titanium	<0.0050	<0.0050	0.0066	0.0064	<0.0050	<0.0050	0.006
Total Dissolved Solids	140	79	67	<10	24	19	48
Vanadium	0.0073	0.0055	<0.0050	<0.0050	<0.0050	<0.0050	0.0054
Zinc	0.0218	<0.0100	<0.0100	<0.0100	0.0122	<0.0100	<0.0100
Cations, meq/L	2.13	0.74	0.63	0.35	0.27	0.18	0.22
Anions, meq/L	2.10	0.86	0.58	0.34	0.31	0.19	0.16
Balance, %	0.75	-7.38	4.50	1.73	-5.95	-3.74	17.48
SVL Report #	W8J0492	W8K0395	W8L0308	W9A0143	W9B0138	W9C0158	W9D0158

Humidity Cell Analytical Results, SG-1054 195'-220' (1.500 Kg)

					Total Fe					SO_4=			Acidity, as $CaCO_3$			Alkalinity, as $CaCO_3$		
Week	Vol. L	Effluent pH	Redox, mV (vs Ag/AgCI)	Conductivity mS/cm	mg/l	mg/kg	Cum. mg/kg	Fe^{2}+ mg/l	Fe^{3}+ mg/l	mg/l	mg/kg	Cum. mg/kg	mg/l	mg/kg	Cum. mg/kg	mg/l	mg/kg	Cum. mg/kg
0	0.789	7.68	207	0.21	0.01	0.005	0.005	0.00	0.01	80.4	42.29	42.29	0.0	0.00	0.00	18.00	9.47	9.47
1	0.675	8.08	197	0.27	0.01	0.005	0.010	0.00	0.01	80.4	36.18	78.47	0.0	0.00	0.00	26.00	11.70	21.17
2	0.634	8.03	177	0.22	0.03	0.013	0.023	0.00	0.03	44.5	18.81	97.28	0.0	0.00	0.00	38.00	16.06	37.23
3	0.728	7.97	216	0.17	0.04	0.019	0.042	0.02	0.02	12.0	5.82	103.10	0.0	0.00	0.00	26.00	12.62	49.85
4	0.726	7.92	227	0.17	0.07	0.034	0.076	0.04	0.03	7.9	3.82	106.92	0.0	0.00	0.00	28.00	13.55	63.40
5	0.782	7.90	231	0.15	0.04	0.021	0.097	0.03	0.01	4.1	2.14	109.06	0.0	0.00	0.00	26.00	13.55	76.95
6	0.755	7.69	252	0.16	0.11	0.055	0.152	0.02	0.09	6.9	3.47	112.53	0.0	0.00	0.00	26.00	13.09	90.04
7	0.736	7.60	250	0.16	0.06	0.029	0.181	0.04	0.02	5.5	2.70	115.23	0.0	0.00	0.00	24.00	11.78	101.82
8	0.717	7.52	251	0.14	0.00	0.000	0.181	0.00	0.00	5.0	2.39	117.62	0.0	0.00	0.00	18.00	8.60	110.42
9	0.734	7.38	251	0.17	0.04	0.020	0.201	0.03	0.01	5.1	2.50	120.12	0.0	0.00	0.00	24.00	11.74	122.16
10	0.755	7.28	285	0.16	0.08	0.040	0.241	0.03	0.05	5.2	2.62	122.74	0.0	0.00	0.00	22.00	11.07	133.23
11	0.725	7.61	271	0.15	0.03	0.015	0.256	0.02	0.01	3.5	1.69	124.43	0.0	0.00	0.00	20.00	9.67	142.90
12	0.712	8.13	216	0.14	0.05	0.024	0.280	0.03	0.02	3.6	1.71	126.14	0.0	0.00	0.00	22.00	10.44	153.34
13	0.750	7.76	218	0.15	0.06	0.030	0.310	0.03	0.03	5.0	2.50	128.64	0.0	0.00	0.00	26.00	13.00	166.34
14	0.726	8.06	222	0.15	0.06	0.029	0.339	0.03	0.03	8.4	4.07	132.71	0.0	0.00	0.00	22.00	10.65	176.99
15	0.694	7.96	235	0.16	0.07	0.032	0.371	0.04	0.03	4.4	2.04	134.75	0.0	0.00	0.00	22.00	10.18	187.17
16	0.757	8.02	227	0.14	0.07	0.035	0.406	0.03	0.04	3.9	1.97	136.72	0.0	0.00	0.00	14.00	7.07	194.24
17	0.738	8.04	270	0.15	0.05	0.025	0.431	0.04	0.01	3.7	1.82	138.54	0.0	0.00	0.00	18.00	8.86	203.10
18	0.770	8.05	263	0.15	0.08	0.041	0.472	0.04	0.04	4.4	2.26	140.80	0.0	0.00	0.00	18.00	9.24	212.34
19	0.722	7.74	226	0.16	0.05	0.024	0.496	0.03	0.02	3.0	1.44	142.24	0.0	0.00	0.00	16.00	7.70	220.04
20	0.723	7.91	225	0.15	0.05	0.024	0.520	0.04	0.01	3.8	1.83	144.07	0.0	0.00	0.00	16.00	7.71	227.75
21	0.767	7.69	228	0.16	0.05	0.026	0.546	0.02	0.03	4.0	2.05	146.12	0.0	0.00	0.00	22.00	11.25	239.00
22	0.728	7.51	221	0.14	0.08	0.039	0.585	0.05	0.03	6.5	3.15	149.27	0.0	0.00	0.00	16.00	7.77	246.77
23	0.734	7.74	219	0.13	0.05	0.024	0.609	0.05	0.00	4.4	2.15	151.42	0.0	0.00	0.00	16.00	7.83	254.60
24	0.736	7.93	217	0.13	0.09	0.044	0.653	0.06	0.03	3.1	1.52	152.94	0.0	0.00	0.00	12.00	5.89	260.49
25	0.732	8.19	206	0.13	0.07	0.034	0.687	0.04	0.03	2.9	1.42	154.36	0.0	0.00	0.00	16.00	7.81	268.30
26	0.738	8.19	216	0.13	0.08	0.039	0.726	0.05	0.03	5.3	2.61	156.97	0.0	0.00	0.00	12.00	5.90	274.20
27	0.712	8.18	218	0.13	0.07	0.033	0.759	0.05	0.02	3.0	1.42	158.39	0.0	0.00	0.00	12.00	5.70	279.90
28	0.751	7.92	229	0.13	0.07	0.035	0.794	0.00	0.07	2.7	1.35	159.74	0.0	0.00	0.00	10.00	5.01	284.91

Profile II Analytical Results, Humidity Cell Extracts,
Bald Mountain ARD Study, SG-1054 195'-220'

	Extract						
Analysis, mg/L	Week 0	Wks 1-4	Wks 5-8	Wks 9-12	Wks 13-16	Wks 17-20	Wks 21-24
Alkalinity, $CaCO_3$	11.9	28.7	18	40.5	18.9	14.7	12.7
CO_3, $CaCO_3$	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
HCO_3	11.9	28.7	18	40.5	18.9	14.7	12.7
Aluminum	<0.080	<0.080	0.126	0.086	<0.080	<0.080	0.09
Antimony	0.00357	0.00714	0.00487	0.00345	0.0045	0.00446	0.00401
Arsenic	<0.00300	0.0107	0.00544	0.00363	0.00317	0.00426	0.00322
Barium	0.236	0.158	0.264	0.184	0.304	0.327	0.35
Beryllium	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Bismuth	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Boron	0.097	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Cadmium	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Calcium	19.6	18.4	7.94	10.4	7.46	6.47	5.9
Chloride	7.07	2.11	<0.200	0.295	0.262	<0.200	<0.200
Chromium	0.0124	0.0065	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Cobalt	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Copper	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluoride	0.485	0.592	0.251	0.272	0.365	0.53	0.229
Gallium	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Iron	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Lead	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300
Lithium	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Magnesium	2.44	2.22	0.912	6.04	0.826	0.685	0.598
Manganese	0.0055	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Mercury	<0.00026	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Molybdenum	0.0115	0.0203	0.0101	0.0243	0.0083	<0.0080	<0.0080
Nickel	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate/Nitrite as N	0.674	0.133	<0.0500	0.106	<0.100	<0.0500	<0.0500
pH, stu	7.37	8.02	6.98	7.79	7.22	6.88	6.43
Phosphorus	0.062	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	6.49	7.68	3.08	2.68	2.23	1.82	1.43
Scandium	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Selenium	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Silver	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium	10.3	3.97	<0.50	<0.50	<0.50	0.55	<0.50
Strontium	0.0688	0.0556	0.0409	0.0516	0.0386	0.039	0.0374
Sulfate	66.7	44.1	8.46	19.7	6.85	7.51	5.52
Thallium	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Tin	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Titanium	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Dissolved Solids	130	100	56	95	32	59	22
Vanadium	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zinc	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Cations, meq/L	1.80	1.48	0.57	1.10	0.51	0.46	0.40
Anions, meq/L	1.90	1.59	0.55	1.25	0.55	0.48	0.38
Balance, %	-2.69	-3.74	1.93	-6.38	-3.99	-2.24	2.00
SVL Report #	W8J0199	W8K0025	W8L0017	W8L0487	W9A0389	W9B0365	W9C0450

Humidity Cell Analytical Results, SG-1054 355'-380' (1.520 Kg)

					Total Fe					SO_4=			Acidity, as $CaCO_3$			Alkalinity, as $CaCO_3$		
Week	Vol. L	Effluent pH	Redox, mV (vs Ag/AgCI)	Conductivity mS/cm	mg/l	mg/kg	Cum. mg/kg	Fe^2+ mg/l	Fe^3+ mg/l	mg/l	mg/kg	Cum. mg/kg	mg/l	mg/kg	Cum. mg/kg	mg/l	mg/kg	Cum. mg/kg
0	0.647	7.43	183	0.30	0.01	0.004	0.004	0.01	0.00	22.4	9.53	9.53	0.0	0.00	0.00	14.00	5.96	5.96
1	0.630	7.59	203	0.18	0.01	0.004	0.008	0.01	0.00	22.4	9.28	18.81	0.0	0.00	0.00	18.00	7.46	13.42
2	0.482	7.56	251	0.15	0.02	0.006	0.014	0.01	0.01	10.1	3.20	22.01	0.0	0.00	0.00	14.00	4.44	17.86
3	0.511	7.45	248	0.16	0.07	0.024	0.038	0.00	0.07	10.6	3.56	25.57	0.0	0.00	0.00	22.00	7.40	25.26
4	0.646	7.35	295	0.08	0.01	0.004	0.042	0.00	0.01	0.4	0.17	25.74	0.0	0.00	0.00	14.00	5.95	31.21
5	0.879	7.14	290	0.10	0.00	0.000	0.042	0.00	0.00	0.1	0.06	25.80	2.0	1.16	1.16	6.00	3.47	34.68
6	0.788	7.03	288	0.09	0.02	0.010	0.052	0.00	0.02	0.1	0.03	25.83	0.0	0.00	1.16	4.00	2.07	36.75
7	0.721	6.77	295	0.09	0.00	0.000	0.052	0.00	0.00	0.1	0.05	25.88	0.0	0.00	1.16	4.00	1.90	38.65
8	0.734	6.23	296	0.08	0.00	0.000	0.052	0.00	0.00	2.7	1.30	27.18	2.0	0.97	2.12	2.00	0.97	39.62
9	0.730	5.98	325	0.07	0.03	0.014	0.066	0.01	0.02	0.1	0.04	27.22	4.0	1.92	4.04	2.00	0.96	40.58
10	0.719	5.77	331	0.06	0.02	0.009	0.075	0.00	0.02	0.0	0.00	27.22	4.0	1.89	5.94	2.00	0.95	41.53
11	0.718	5.54	340	0.06	0.07	0.033	0.108	0.00	0.07	0.5	0.24	27.46	2.0	0.95	6.88	2.00	0.94	42.47
12	0.703	5.70	268	0.05	0.00	0.000	0.108	0.00	0.00	0.2	0.09	27.55	0.0	0.00	6.88	2.00	0.93	43.40
13	0.706	5.83	293	0.05	0.00	0.000	0.108	0.00	0.00	1.0	0.46	28.01	2.0	0.93	7.81	2.00	0.93	44.33
14	0.686	6.04	283	0.07	0.01	0.005	0.113	0.00	0.01	0.4	0.18	28.19	0.0	0.00	7.81	2.00	0.90	45.23
15	0.691	5.87	289	0.06	0.01	0.005	0.118	0.00	0.01	0.5	0.23	28.42	0.0	0.00	7.81	2.00	0.91	46.14
16	0.701	5.84	256	0.06	0.01	0.005	0.123	0.00	0.01	0.5	0.23	28.65	2.0	0.92	8.73	2.00	0.92	47.06
17	0.693	5.97	306	0.06	0.02	0.009	0.132	0.00	0.02	0.6	0.27	28.92	2.0	0.91	9.64	2.00	0.91	47.97
18	0.704	6.06	306	0.06	0.02	0.009	0.141	0.02	0.00	0.5	0.23	29.15	2.0	0.93	10.57	2.00	0.93	48.90
19	0.684	5.67	303	0.11	0.07	0.032	0.173	0.00	0.07	0.0	0.00	29.15	4.0	1.80	12.37	2.00	0.90	49.80
20	0.693	5.73	254	0.06	0.01	0.005	0.178	0.00	0.01	0.0	0.00	29.15	2.0	0.91	13.28	2.00	0.91	50.71
21	0.694	6.01	260	0.06	0.01	0.005	0.183	0.00	0.01	0.9	0.41	29.56	0.0	0.00	13.28	2.00	0.91	51.62
22	0.683	6.39	254	0.06	0.01	0.004	0.187	0.00	0.01	0.7	0.31	29.87	0.0	0.00	13.28	2.00	0.90	52.52
23	0.693	6.33	275	0.10	0.00	0.000	0.187	0.00	0.00	0.7	0.32	30.19	0.0	0.00	13.28	2.00	0.91	53.43
24	0.722	6.61	241	0.06	0.01	0.005	0.192	0.00	0.01	0.6	0.29	30.48	0.0	0.00	13.28	2.00	0.95	54.38
25	0.685	6.74	249	0.07	0.02	0.009	0.201	0.00	0.02	0.7	0.32	30.80	2.0	0.90	14.18	1.00	0.45	54.83
26	0.641	7.15	236	0.10	0.02	0.008	0.209	0.01	0.01	1.6	0.67	31.47	2.0	0.84	15.03	2.00	0.84	55.67
27	0.684	7.39	223	0.08	0.00	0.000	0.209	0.00	0.00	0.1	0.03	31.50	2.0	0.90	15.93	2.00	0.90	56.57
28	0.688	7.37	242	0.07	0.00	0.000	0.209	0.00	0.00	0.0	0.00	31.50	2.0	0.91	16.83	0.00	0.00	56.57

Profile II Analytical Results, Humidity Cell Extracts,
Bald Mountain ARD Study, SG-1054 355'-380'

	Extract						
Analysis, mg/L	Week 0	Wks 1-4	Wks 5-8	Wks 9-12	Wks 13-16	Wks 17-20	Wks 21-24
Alkalinity, $CaCO_3$	19.6	10.6	1.7	<1.0	<1.0	<1.0	<1.0
CO_3, $CaCO_3$	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
HCO_3	19.6	10.6	1.7	<1.0	<1.0	<1.0	<1.0
Aluminum	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
Antimony	0.00397	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300
Arsenic	0.0103	0.0156	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300
Barium	0.106	0.0818	0.0869	0.0556	0.028	0.0376	0.0358
Beryllium	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Bismuth	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Boron	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Cadmium	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Calcium	33.5	5.89	1.52	0.481	0.477	0.48	0.594
Chloride	15	1.83	0.304	<0.200	0.221	0.219	<0.200
Chromium	0.0336	0.0062	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Cobalt	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Copper	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluoride	0.45	0.409	0.289	<0.100	<0.100	0.155	<0.100
Gallium	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Iron	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Lead	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300
Lithium	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Magnesium	3.89	0.571	0.16	0.064	<0.060	<0.060	<0.060
Manganese	0.0121	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Mercury	<0.00022	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Molybdenum	0.0105	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080
Nickel	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate/Nitrite as N	3.02	0.153	0.451	0.333	0.176	0.118	0.0804
pH, stu	7.18	7.02	5.97	5.74	5.71	5.93	5.93
Phosphorus	0.084	0.201	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	10.5	3.97	0.67	<0.50	<0.50	<0.50	<0.50
Scandium	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Selenium	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Silver	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Sodium	18.5	2.44	<0.50	<0.50	<0.50	<0.50	<0.50
Strontium	0.115	0.0299	0.0099	<0.0050	<0.0050	<0.0050	<0.0050
Sulfate	104	14.5	2.14	0.48	0.58	0.72	0.79
Thallium	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Tin	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Titanium	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Dissolved Solids	180	36	54	32	12	<10	<10
Vanadium	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zinc	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Cations, meq/L	3.07	0.55	0.11	0.03	0.03	0.03	0.03
Anions, meq/L	3.22	0.60	0.13	0.04	0.04	0.04	0.03
Balance, %	-2.30	-3.81	-8.87	-11.83	-14.90	-14.77	5.10
SVL Report #	W8J0199	W8K0025	W8L0017	W8L0487	W9A0389	W9B0365	W9C0450

APPENDIX F

Wildlife Species List

Nevada Division of Wildlife (Eastern Region)
Wildlife Species List - South Ruby Allotment (Unit 104)

Birds

Order: Podicipediformes
Family: Podicipedidae (Grebes)
Pied-billed Grebe	*Podilymbus podiceps*

Order: Ciconiiformes
Family: Ardeidae (Bitterns, Herons, Egrets)
Great Blue Heron	*Ardea herodias*

Family: Threskiornithidae (Ibises)
White-faced Ibis	*Plegadis chihi*

Family: Cathartidae (New World Vultures)
Turkey Vulture	*Cathartes aura*

Order: Anseriformes
Family: Anatidae (Ducks, Geese, Swans)
Greater White-fronted Goose	*Anser albifrons*
Snow Goose	*Chen caerulescens*
Canada Goose	*Branta canadensis*
Trumpeter Swan	*Cygnus buccinator*
Tundra Swan	*Cygnus columbianus*
Wood Duck	*Aix sponsa*
Gadwall	*Anus strepera*
American Widgeon	*Anus americana*
Mallard	*Anus platyrhynchos*
Cinnamon Teal	*Anus cyanoptera*
Blue-winged Teal	*Anus discors*
Northern Shoveler	*Anus clypeata*
Northern Pintail	*Anus acuta*
Green-winged Teal	*Anus crecca*
Canvasback	*Aythya valisinaria*
Redhead	*Aythya americana*
Ring-necked Duck	*Aythya collaris*
Lesser Scaup	*Aythya affinis*
Bufflehead	*Bucephala albeola*
Common Goldeneye	*Bucephala clangula*
Barrow's Goldeneye	*Bucephala islandica*
Hooded Merganser	*Lophodytes cucullatus*
Common Merganser	*Mergus merganser*
Red-breasted Merganser	*Mergus serrator*
Ruddy Duck	*Oxyura jamaicensis*

Order: Falconiformes
Family: Accipitridae (Hawks, Eagles, Osprey)
Bald Eagle	*Haliaetus leucocephalus*
Northern Harrier	*Circus cyaneus*
Swainson's Hawk	*Buteo swainsoni*
Red-tailed Hawk	*Buteo jamaicensis*
Ferruginous Hawk	*Buteo regalis*
Rough-legged Hawk	*Buteo lagopus*
Golden Eagle	*Aquila chrysaetos*

Family: Falconidae (Falcons)
American Kestrel	*Falco sparverius*
Merlin	*Falco columbarius*
American Peregrine Falcon	*Falco perigrinus*
Prairie Falcon	*Falco mexicanus*

Order: Galliformes
Family: Phasianidae (Grouse, Partridge)
Chukar	*Alectoris chukar*
Gray Partridge	*Perdix perdix*
Sage Grouse	*Centrocercus urophasianus*

Order: Gruiformes
Family: Rallidae (Rails, Coots)
Sora	*Porzana carolina*
American Coot	*Fulica americana*

Family: Gruidae (Cranes)
Greater Sandhill Crane	*Grus canadansis tabida*

Order: Charadriiformes
Family: Charadriidae (Plovers)
Snowy Plover	*Charadrius alexandrinus*
Killdeer	*Charadrius vociferus*

Family: Recurvirostridae (Avocets)
Black-necked Stilt	*Himantopus mexicanus*
American Avocet	*Recurvirostra americana*

Family: Scolopacidae (Sandpipers, Phalaropes)
Greater Yellowlegs	*Tringa melanoleuca*
Lesser Yellowlegs	*Tringa flavipes*
Willet	*Catoptrophorus semipalmatus*
Long-billed Curlew	*Numenius americanus*
Western Sandpiper	*Calidris mauri*
Least Sandpiper	*Calidris minutilla*
Common Snipe	*Gallinago gallinago*

Family: Laridae (Gulls, Terns)
Franklin's Gull	*Larus pipixcan*
Ring-billed Gull	*Larus delawarensis*
California Gull	*Larus californicus*
Caspian Tern	*Sterna caspia*
Forster's Tern	*Sterna forsteri*

Order: Columbiformes
Family: Columbidae (Doves)
Rock Dove	*Columba livia*
Mourning Dove	*Zenaida macroura*

Order: Strigiformes

Family: Tytonidae (Barn Owls)
Barn Owl *Tyto alba*

Family: Strigidae (Owls)
Western Screech-Owl *Otus kennicottii*
Great Horned Owl *Bubo virginianus*
Burrowing Owl *Athene cunicularia*
Short-eared Owl *Asio flammeus*
Northern Saw-whet Owl *Aegolius acadicus*

Order: Caprimulgiformes
Family: Caprimulgidae (Goatsuckers)
Common Nighthawk *Chordeiles minor*
Common Poorwill *Phalaenoptilus nuttallii*

Order: Apodiformes
Family: Trochilidae (Hummingbirds)
Black-chinned Hummingbird *Archilochus alexandri*
Calliope Hummingbird *Stellula calliope*
Broad-tailed Hummingbird *Selasphorus platycercus*
Rufous Hummingbird *Selasphorus rufus*

Order: Piciformes
Family: Picidae (Woodpeckers)
Red-naped Sapsucker *Sphyrapicus nuchalis*
Downy Woodpecker *Picoides pubescens*
Hairy Woodpecker *Picoides villosus*
Northern Flicker *Colaptes auratus*

Order: Passeriformes
Family: Tyrannidae (Flycatchers)
Western Wood-Pewee*Contopus sordidulus*
Willow Flycatcher *Epidonax traillii*
Gray Flycatcher *Epidonax wrightii*
Say's Phoebe *Sayornis saya*
Ash-throated Flycatcher *Myiarchus cinerascens*
Western Kingbird *Tyrannus verticalis*

Family: Laniidae (Shrikes)
Loggerhead Shrike *Lanius ludovicianus*
Northern Shrike *Lanius excubitor*

Family: Corvidae (Jays)
Western Scrub-Jay *Aphelocoma californica*
Pinyon Jay *Gymnorhinus cyanocephalus*
Black-billed Magpie *Pica pica*
American Crow *Corvus brachyrhynchos*
Common Raven *Corvus corax*

Family: Aluididae (Larks)
Horned Lark *Eremophila alpestris*

Family: Hirundinidae (Swallows)
Tree Swallow *Tachycineta bicolor*
Violet-green Swallow *Tachycineta thalassina*
N. Rough-winged Swallow *Stelgidopteryx serripennis*
Barn Swallow *Hirundo rustica*

Family: Paridae (Chickadees, Titmice)
Mountain Chickadee *Poecile gambeli*
Juniper Titmouse *Baeolophus griseus*

Family: Aegithalidae (Bushtit)
Bushtit *Psaltriparus minimus*

Family: Troglodytidae (Wrens)
Rock Wren *Salpinctes obsoletus*
Canyon Wren *Catherpes mexicanus*
Marsh Wren *Cistothorus palustris*

Family: Regulidae (Kinglets)
Golden-crowned Kinglet *Regulus satrapa*
Ruby-crowned Kinglet *Redulus calendula*

Family: Sylviidae (Gnatcatchers)
Blue-gray Gnatcatcher *Polioptila caerulea*

Family: Turnidae (Thrushes)
Mountain Bluebird *Sialia currucoides*
Townsend's Solitaire *Myadestes townsendi*
American Robin *Turdus migratorius*

Family: Mimidae (Thrashers, Mockingbirds)
Northern Mockingbird *Mimus polyglottos*
Sage Thrasher *Oreoscoptes montanus*

Family: Sturnidae (Starlings)
European Starling *Sturnus vulgaris*

Family: Motacillidae (Pipits)
American Pipit *Anthus rubescens*

Family: Parulidae (Warblers)
Yellow Warbler *Dendroica petechia*
Yellow-rumped Warbler *Dendroica coronata*
Black-throated Gray Warbler *Dendroica nigrescens*
Common Yellowthroat *Geothlypis trichas*

Family: Emberizidae (Sparrows,Towhees,Juncos)
Green-tailed Towhee *Pipilo chlorurus*
Spotted Towhee *Pipilo maculatus*
American Tree Sparrow *Spizella arborea*
Chipping Sparrow *Spizella passerina*
Brewer's Sparrow *Spizella breweri*
Vesper Sparrow *Pooecetes gramineus*

Family: Emberizidae (Sparrows,Towhees,Juncos) (continued)
Lark Sparrow *Chondestes grammacus*
Black-throated Sparrow *Amphispiza bileneata*
Sage Sparrow *Amphispiza belli*
Savannah Sparrow *Passerculus sandwichensis*
Fox Sparrow *Passerella iliaca schistacea*
Song Sparrow *Melospiza melodia*
Lincoln's Sparrow *Melospiza lincolnii*
White-crowned Sparrow *Zonotrichia leucophrys*

Dark-eyed Junco*(Oregon)*	*Junco hyemalis therburi*
Dark-eyed Junco(*Gray-headed*)	*Junco hyemalis caniceps*

Family: Cardinalidae (Grosbeaks, Buntings)

Black-headed Grosbeak	*Pheucticus melanocephalus*
Lazuli Bunting	*Passerina amoena*

Family: Icteridae (Blackbirds, Orioles)

Red-winged Blackbird	*Agelaius phoeniceus*
Western Meadowlark	*Sturnella neglecta*
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*
Brewer's Blackbird	*Euphagus cyanocephalus*
Great-tailed Grackle	*Quiscalus mexicanus*
Brown-headed Cowbird	*Molothrus ater*
Bullock's Oriole	*Icterus bullockii*
Scott's Oriole	*Icterus parisorum*

Family: Fringillidae (Finches, Grosbeaks)

Gray-crowned Rosy Finch	*Leucosticte tephrocotis*
Black Rosy Finch	*Leucosticte atrata*
Cassin's Finch	*Carpodacus cassinii*
House Finch	*Carpodacus mexicanus*

Family: Passeridae (Old World Sparrows)

House Sparrow	*Passer domesticus*

Mammals

Order: Insectivora (Insect-Eaters)

Family: Soricidae (Shrews)

Merriam's Shrew	*Sorex meriammi*
Dusky Shrew	*Sorex monticolus*
Vagrant Shrew	*Sorex vagrans*
Water Shrew	*Sorex palustris*
Preble's Shrew	*Sorex preblei*

Order: Chiroptera (Bats)

Family: Vespertilionidae (Plainnose Bats)

California Myotis	*Myotis californicus*
Small-footed Myotis	*Myotis ciliolabrum*
Long-eared Myotis	*Myotis evotis*
Little Brown Bat	*Myotis lucifugus*
Long-legged Myotis	*Myotis volans*
Hoary Bat	*Lasiurus cinereus*
Silver-haired Bat	*Lasionycteris noctivagans*
Western Pipistrelle	*Pipistrellus hesperus*
Big Brown Bat	*Eptesicus fuscus*
Townsend's Big-eared Bat	*Corynorhinus townsendii*
Spotted Bat	*Euderma maculata*
Pallid Bat	*Antrozous pallidus*

Family: Molossidae (Freetail Bats)

Brazilian Free-tailed Bat	*Tadarida brasiliensis*

Order: Lagomorpha (Hares, Pikas, Rabbits)

Family: Leporidae (Hares, Rabbits)

Pygmy Rabbit	*Brachylagus idahoensis*
Mountain Cottontail	*Sylvilagus nuttalli*
Black-tailed Jackrabbit	*Lepus californicus*

Order: Rodentia (Rodents)

Family: Sciuridae (Squirrels)

Least Chipmunk	*Tamias minimus*
Cliff Chipmunk	*Tamias dorsalis*
Whitetail Antelope Squirrel	*Ammospermophilus leucurus*
Townsend Ground Squirrel	*Spermophilus townsendii*
Belding Ground Squirrel	*Spermophilus beldingi*
Rock Squirrel	*Spermophilus variegatus*

Family: Geomyidae (Gophers)

Botta's Pocket Gopher	*Thomomys bottae*
Northern Pocket Gopher	*Thomomys talpoides*
Southern Pocket Gopher	*Thomomys umbrinus*

Family: Heteromyidae (Kangaroo Rodents)

Little Pocket Mouse	*Perognathus longimembris*
Great Basin Pocket Mouse	*Perognathus parvus*
Dark Kangaroo Mouse	*Microdipodops megacephalus*
Ord Kangaroo Rat	*Dipodomys ordii*
Chisel-toothed Kangaroo Rat	*Dipodomys microps*

Family: Cricetidae (Mice, Rats, Voles)

Western Harvest Mouse	*Reithrodontomys megalotis*
Canyon Mouse	*Peromyscus crinitus*
Deer Mouse	*Peromyscus maniculatus*
Pinion Mouse	*Peromyscus truei*
Northern Grasshopper Mouse	*Onychomys leucogaster*
Desert Woodrat	*Neotoma lepida*
Mountain Vole	*Microtus montanus*
Long-tailed Vole	*Microtus longicaudus*
Sagebrush Vole	*Lemmiscus curtatus*
Muskrat	*Ondatra zibethica*

Family: Zapodidae (Jumping Mice)

Western Jumping Mouse	*Zapus princeps*

Family: Erethizontidae (New World Porcupines)

Porcupine	*Erethizon dorsatum*

Order: Carnivora (Flesh-Eaters)

Family: Canidae (Dogs, Wolves, Foxes)

Coyote	*Canis latrans*
Gray Wolf	*Canis lupus* (*locally extirpated*)
RedFox	*Vulpes vulva*
Kit Fox	*Vulpes macrotis*

Family: Procyonidae (Racoons and Their Kin)

Raccoon	*Procyon lotor*

Family: Mustelidae (Weasels and Their Kin)

Short-tailed Weasel	*Mustela erminae*
Long-tailed Weasel	*Mustela frenata*

Badger *Taxidea taxus*
Striped Skunk *Mephitis mephitis*
Spotted Skunk *Spilogale putorius*

Family: Felidae (Cats)
Mountain Lion *Felix concolor*
Bobcat *Lynx rufus*

Order: Artiodactyla (Hoofed Mammals)

Family: Cervidae (Deer)
Rocky Mountain Elk *Cervus canadensis*
Mule Deer *Odocoileus hemionus*

Family: Antilocapridae (Pronghorn)
Pronghorn *Antilocapra americana*

Bullfrog *Rana catesbeiana*

Updated: 1/2002 - Peter V. Bradley - Nevada Division of Wildlife - Elko.

Note: This list is a combination of wildlife sight record data and our best effort to predict what wildlife would exist in this area in all seasons and in optimum habitat conditions.

Reptiles

Order: Squamata (Lizards, Snakes)

Family: Iguanidae (Iguanas and Their Kin)
Long-nosed Leopard Lizard *Gambelia wislizenii*
Desert Spiny Lizard *Sceloporus magister*
Western Fence Lizard *Sceloporus occidentalis*
Sagebrush Lizard *Sceloporus* graciosus
Side-blotched Lizard *Uta stansburiana*
Desert Horned Lizard *Phrynosoma platyrhinos*

Family: Scincidae (Skinks)
Western Skink *Eumeces skiltonianus*

Family: Teiidae (Whiptails)
Western Whiptail *Cnemidophorus tigrus*

Family: Colubridae (Colubrid Snakes)
Ringneck Snake *Diadophis punctatus*
Racer *Coluber constrictor*
Striped Whipsnake *Masticophis taeniatus*
Gopher Snake *Pituophis melanoleucus*
Long-nosed Snake *Rhinocheilus lecontei*
Western Terrestrial Garter *Thamnophis elegans*
Ground Snake *Sonora semiannulata*
Night Snake *Hypsiglena torquata*

Family: Viperidae (Vipers)
Great Basin Rattlesnake *Crotalus viridis lutosus*

Amphibians

Family: Pelobatidae (Spadefoots)
Great Basin Spadefoot Toad *Scaphiopus intermontanus*

Family: Ranidae (True Frogs)
Spotted Frog *Rana pretiosa*

APPENDIX G

BLM Sensitive Species List

BLM SENSITIVE SPECIES

SENSITIVE SPECIES are taxa that are not already included as BLM Special Status Species under (1) Federally listed, proposed, or candidate species; or (2) State of Nevada listed species. BLM policy is to provide these species with the same level of protection as is provided for candidate species in BLM Manual 6840.06 C, that is to "ensure that actions authorized, funded, or carried out do not contribute to the need for the species to become listed". The Sensitive Species designation is normally used for species that occur on Bureau administered lands for which BLM has the capability to significantly affect the conservation status of the species through management. The BLM Manual 6840.06 E provides factors by which a native species may be listed as "sensitive" if it:

1. **Could become endangered or extirpated from a state, or within a significant portion of its range in the foreseeable future;**

2. **Is under status review by the FWS and/or National Marine Fisheries Service;**

3. **Is undergoing significant current or predicted downward trends in: (1) habitat capability that would reduce a species' existing distribution; and/or (2) population or density such that federally listed, proposed, candidate, or State listed status may become necessary.**

4. **Typically consists of small and widely dispersed populations;**

5. **Inhabits ecological refugia, or specialized or unique habitats;**

6. **Is State-listed, but which may be better conserved through application of BLM sensitive species status.**

Scientific Name	Common Name	Factor(s)
Mammals (31 total)		
Antrozous pallidus	pallid bat	4,5
Brachylagus idahoensis	pygmy rabbit	1,2,3,4
Corynorhinus townsendii	Townsend's big-eared bat	4,5
Eptesicus fuscus	big brown bat	4,5
Euderma maculatum	spotted bat	1,2,4,5
Eumops perotis californicus	greater western mastiff bat	4,5
Idionycteris phyllotis	Allen's lappet-browed bat	4,5
Lasionycteris noctivagans	silver-haired bat	4,5
Lasiurus blossevilli	western red bat	4,5
Lasiurus cinereus	hoary bat	4,5
Lontra canadensis	river otter	4,5
Macrotus californicus	California leaf-nosed bat	4,5
Microdipodops megacephalus albiventer	Desert Valley kangaroo mouse	5
Microdipodops megacephalus nasutus	Fletcher dark kangaroo mouse	5
Microtus montanus fucosus	Pahranagat Valley montane vole	5
Microtus montanus nevadensis	Ash Meadows montane vole	5
Myotis californicus	California myotis	4,5
Myotis ciliolabrum	small-footed myotis	4,5
Myotis evotis	long-eared myotis	4,5
Myotis lucifugus	little brown myotis	4,5
Myotis thysanodes	fringed myotis	4,5
Myotis velifer	cave myotis	4,5
Myotis volans	long-legged myotis	4,5
Myotis yumanensis	Yuma myotis	4,5
Nyctinomops macrotis	big free-tailed bat	4,5
Ovis canadensis nelsoni	desert bighorn sheep	3,4,5
Pipistrellus hesperus	western pipistrelle bat	4,5
Sorex preblei	Preble's shrew	4,5
Tadarida braziliensis	Brazilian free-tailed bat	5
Thomomys bottae abstrusus	Fish Spring pocket gopher	5
Thomomys bottae curtatus	San Antonio pocket gopher	5

Birds (33 total)

Accipiter gentilis	Northern Goshawk	3,4,5
Agelaius tricolor	Tricolored Blackbird	3,4,5
Aquila chrysaetos	Golden Eagle	4,6
Asio flammeus	Short-eared Owl	4
Asio otus	Long-eared Owl	4
Athene cunicularia	Burrowing Owl	3,4
Baeolophus griseus	Juniper Titmouse	4,5
Buteo regalis	Ferruginous Hawk	4,5
Buteo swainsoni	Swainson's Hawk	4,5
Centrocercus urophasianus	Greater Sage-Grouse	2,3
Charadrius alexandrinus	Snowy Plover	3,4
Chlidonias niger	Black Tern	3,4.5
Dolichonyx oryzivorus	Bobolink	3,4
Falco mexicanus	Prairie Falcon	3,4
Falco peregrinus	Peregrine falcon	3,4,5
Grus canadensis	Sandhill Crane	5
Gymnorhinus cyanocephalus	Pinyon Jay	3,5
Icteria virens	Yellow-breasted Chat	4,5
Ixobrychus exilis	Least Bittern	5
Lanius ludovicianus	Loggerhead Shrike	2,3,4
Leucosticte atrata	Black Rosy-Finch	5
Melanerpes lewis	Lewis's Woodpecker3	
Numenius americanus	Long-billed Curlew	5
Oreortyx pictus	Mountain quail	3,4,5
Otus flammeolus	Flammulated Owl	4
Phainopepla nitens	Phainopepla	5
Pooecetes gramineus	Vesper Sparrow	3
Sphyrapicus nuchalis	Red-naped Sapsucker	3
Toxostoma crissale	Crissal Thrasher	3,5
Toxostoma lecontei	LeConte's Thrasher	3,5
Tympanuchus phasianellus columbianus	Columbian Sharp-tailed Grouse	1,3,4
Vermivora luciae	Lucy's Warbler	3,5
Vireo vicinior	Gray Vireo	3,5

Reptiles (6 total)

Elgaria coerulea palmeri	Sierra alligator lizard	5
Eumeces gilberti rubricaudatus	western red-tailed skink	5
Heloderma suspectum	Gila monster	4,5,6
Lampropeltis pyromelana	Sonoran mountain kingsnake	5
Phrynosoma douglassii	short-horned lizard	5
Sauromalus obesus	Chuckwalla	5

Amphibians (3 total)

Bufo microscaphus	Southwestern toad	4,5
Bufo nelsoni	Amargosa toad	3,5
Rana pipiens	northern leopard frog	1,3,5

Fishes (25 total)

Catostomus clarki intermedius	White River desert sucker	5
Catostomus clarki ssp.	Meadow Valley Wash desert sucker	5
Catostomus latipinnis	flannelmouth sucker	3,5
Catostomus sp.	Wall Canyon sucker	3,5
Crenichthys baileyi albivallis	Preston White River springfish	5
Crenichthys baileyi thermophilus	Moorman White River springfish	5
Gila bicolor euchila	Fish Creek Springs tui chub	5
Gila bicolor isolata	Independence Valley tui chub	5
Gila bicolor newarkensis	Newark Valley tui chub	5
Gila bicolor ssp.	Big Smoky Valley tui chub	5
Gila bicolor ssp.	Fish Lake Valley tui chub	5
Gila bicolor ssp.	Hot Creek Valley tui chub	5
Gila bicolor ssp.	Railroad Valley tui chub	3,5
Gila seminuda (Muddy River population only)	Virgin River chub	3,5
Lepidomeda mollispinis mollispinis	Virgin River spinedace	5
Oncorhynchus clarki bouvieri	Yellowstone cutthroat trout	5
Oncorhynchus clarki utah	Bonneville cutthroat trout	5
Oncorhynchus mykiss gairdneri	interior redband trout	5
Relictus solitarius	relict dace	5
Rhinichthys osculus lariversi	Big Smoky Valley speckled dace	5
Rhinichthys osculus moapae	Moapa speckled dace	5
Rhinichthys osculus velifer	Pahranagat speckled dace	3,5

Rhinichthys osculus ssp.	Meadow Valley Wash speckled dace	5
Rhinichthys osculus ssp.	Monitor Valley speckled dace	5
Rhinichthys osculus ssp.	Oasis Valley speckled dace	3,5
Rhinichthys osculus ssp.	White River speckled dace	3,5

Snails (26 total)

*Oreohelix nevadensis*Sch	ell Creek mountainsnail	5
Pyrgulopsis aloba	Duckwater pyrg	5
Pyrgulopsis anatina	southern Duckwater pyrg	5
Pyrgulopsis augusta	elongate Cain Spring pyrg	5
*Pyrgulopsis basiglans*l	arge-gland Carico pyrg	5
Pyrgulopsis bruesi	Fly Ranch pyrg	5
Pyrgulopsis carinata	carinate Duckwater pyrg	5
Pyrgulopsis cruciglans	transverse gland pyrg	5
Pyrgulopsis deaconi	Spring Mountains pyrg	5
Pyrgulopsis dixensis	Dixie Valley pyrg	5
Pyrgulopsis humboldtensis	Humboldt pyrg	5
Pyrgulopsis landeyi	Landyes pyrg	5
Pyrgulopsis limaria	squat Mud Meadows pyrg	5
Pyrgulopsis micrococcus	Oasis Valley pyrg	5
Pyrgulopsis militaris	northern Soldier Meadow pyrg	5
Pyrgulopsis orbiculata	sub-globose Steptoe Ranch pyrg	5
Pyrgulopsis papillata	Big Warm Spring pyrg	5
Pyrgulopsis peculiaris	bifid duct pyrg	5
Pyrgulopsis pictilis	ovate Cain Spring pyrg	5
Pyrgulopsis sulcata	southern Steptoe pyrg	5
Pyrgulopsis umbilicata	southern Soldier Meadow pyrg	5
Pyrgulopsis villacampae	Duckwater Warm Springs pyrg	5
Pyrgulopsis vinyardi	Vinyards pyrg	5
Pyrgulopsis wongi	Wongs pyrg	5
Tryonia clathrata	grated tryonia	5
T. variegata	Amargosa tryonia	5

Clams & Mussels (1 total)

Anodonta californiensis	California floater	4,5

Ants, Wasps, Bees (2 total)

Andrena balsamorhiza	Mojave gypsum bee	5
Perdita meconis	Mojave poppy bee	5

True Bugs (1 total)

Pelocoris shoshone shoshone	Pahranagat naucorid bug	5

Beetles (14 total)

Aegialia crescenta	Crescent Dune aegialian scarab	5
Aegialia hardyi	Hardy's aegialian scarab	5
Aegialia knighti	aegialian scarab beetle	5
Aegialia magnifica	large aegialian scarab	5
Aphodius sp.	Crescent Dune aphodius scarab	5
Aphodius sp	Big Dune aphodius scarab	5
Aphodius sp.	Sand Mountain aphodius scarab	5
Miloderes sp.	Rulien's miloderes weevil	5
Pseudocotalpa giulianii	Giuliani's dune scarab	5
Serica psammobunus	Sand Mountain serican scarab	5
Serica ammomenisco	Crescent Dune serican scarab	5
Serica humboldti	Humboldt serican scarab	5
Stenelmis calida calida	Devils Hole warm spring riffle beetle	5
Stenelmis moapa	Moapa warm spring riffle beetle	5

Butterflies (28 total)

Cercyonis oetus alkalorum	Big Smoky wood nymph	5
Cercyonis oetus pallescens	pallid wood nymph	5
Cercyonis pegala carsonensis	Carson Valley wood nymph	5
Cercyonis pegala pluvialis	White River wood nymph	5
Chlosyne acastus robusta	Spring Mountains acastus checkerspot	5
Euphilotes ancilla giulianii	Giuliani's blue	5
Euphilotes ancilla shieldsi	Shield's blue	5
Euphilotes battoides fusimaculata	fused battoides blue	5
Euphilotes bernadino minuta	Baking Powder Flat blue	5
Euphilotes enoptes primavera	early blue	5
Euphilotes mojave virginensis	northern Mojave blue	5
Euphilotes pallescens arenamontana	Sand Mountain blue	5

Euphilotes pallescens calneva	Honey Lake blue	5
Euphilotes pallescens mattonii	Mattoni's blue	5
Euphilotes pallescens ricei	Rice's blue	5
Euphydryas editha koreti	Koret's checkerspot	5
Euphydryas editha monoensis	Mono checkerspot	5
Hesperia miriamae longaevicola	White Mountains skipper	5
Hesperia uncas fulvapalla	Railroad Valley skipper	5
Hesperia uncas giulianii	Mono Basin skipper	5
Hesperia uncas grandiosa	White River Valley skipper	5
*Hesperopsis gracielae*MacNei	ll sooty wing skipper	5
Phyciodes pascoensis arenacolor	Steptoe Valley crescentspot	5
Philotiella speciosa septentrionalis	Great Basin small blue	5
Polites sabuleti sinemaculata	Denio sandhill skipper	5
Pseudocopaeodes eunus alinea	Ash meadows alkali skipper	5
Speyeria hesperis greyi	Grey's silverspot	5
Speyeria nokomis carsonensis	Carson Valley silverspot	5

Plants (106 total)

Angelica scabrida	rough angelica	5
Antennaria arcuata	meadow pussytoes	5
Arabis bodiensis	Bodie Hills rockcress	5
Arabis falcatoria	Grouse Creek rockcress	5
Arabis falcifructa	Elko rockcress	5
Arctomecon merriamii	white bearpoppy; Merriam b.	3,5
Asclepias eastwoodiana	Eastwood milkweed	4
Astragalus aequalis	Clokey milkvetch; equal m.	5
Astragalus amphioxys var. *musimonum*	Sheep Mountain milkvetch; crescent m.	5
Astragalus anserinus	Goose Creek milkvetch	5
Astragalus eurylobus	Needle Mountains milkvetch; Peck Station m.	5
Astragalus funereus	black woollypod; Funeral milkvetch; black m.; Rhyolite m.	5
Astragalus gilmanii	Gilman milkvetch	5
Astragalus mohavensis var. *hemygyrus*	halfring milkvetch; curvepod Mojave m.; Darwin Mesa m.	5
Astragalus mokiacensis	Mokiak milkvetch	5
Astragalus oophorus var. *lavinii*	Lavin eggvetch	5

Astragalus oophorus var. *lonchocalyx*	long-calyx eggvetch; pink e.	5	
Astragalus remotus	Spring Mountains milkvetch		5
Astragalus robbinsii var. *occidentalis*	Lamoille Canyon milkvetch; Ruby m.; Robbin's western m.	5	
Astragalus solitarius	lonesome milkvetch; weak m.	5	
Astragalus tiehmii	Tiehm milkvetch	5	
Astragalus toquimanus	Toquima milkvetch	5	
Astragalus uncialis	Currant milkvetch	5	
Botrychium crenulatum	dainty moonwort; crenulate m.	5	
Calochortus striatus	alkali mariposa lily; striped m. l.	5	
Camissonia megalantha	Cane Spring evening-primrose	5	
Chrysothamnus eremobius	remote rabbitbrush; Pintwater r.	5	
Collomia renacta	Barren Valley collomia	5	
Cordylanthus tecopensis	Tecopa birdbeak	5	
Cryptantha schoolcraftii	Schoolcraft catseye	5	
Cryptantha welshii	White River catseye; Welsh c.	5	
Cusickiella quadricostata	Bodie Hills draba; four-rib whitlowgrass	5	
Cymopterus goodrichii	Goodrich biscuitroot; G. parsley	5	
Cymopterus ripleyi var. *saniculoides*	sanicle biscuitroot; Ripley b.	5	
Dermatocarpon luridum	stream stippleback lichen	5	
Didymodon nevadensis	Gold Butte moss	5	
Enceliopsis argophylla	silverleaf sunray	5	
Epilobium nevadense	Nevada willowherb	5	
Erigeron latus	broad fleabane	5	
Erigeron ovinus	sheep fleabane	5	
Eriogonum anemophilum	windloving buckwheat	5	
Eriogonum bifurcatum	Pahrump Valley buckwheat; forked b.	5	
Eriogonum corymbosum	Las Vegas buckwheat	5	
Eriogonum crosbyae	Crosby buckwheat	5	
Eriogonum diatomaceum	Churchill Narrows buckwheat	5	
Eriogonum heermannii var. *clokeyi*	Clokey buckwheat	5	
Eriogonum lewisii	Lewis buckwheat	5	
Eriogonum phoeniceum	scarlet buckwheat	5	
Eriogonum prociduum	prostrate buckwheat; Austin b.	5	
Eriogonum robustum	altered andesite buckwheat; Lobb b.	5	
Eriogonum tiehmii	Tiehm buckwheat	5	
Eustoma exaltatum	catchfly gentian	5	

Galium hilendiae ssp. *kingstonense*	Kingston bedstraw	5
Glossopetalon pungens var. *glabrum*	smooth dwarf greasebush	5
Glossopetalon pungens var. *pungens*	rough dwarf greasebush	5
Ionactis caelestis	Red Rock Canyon aster	5
Ivesia aperta var. *aperta*	Sierra Valley ivesia	5
Ivesia arizonica var. *saxosa*	rock purpusia	5
Ivesia jaegeri	Jaeger ivesia	5
Ivesia pityocharis	Pine Nut Mountains ivesia; P.N.M. mousetails	5
Ivesia rhypara var. *rhypara*	grimy ivesia	5
Jamesia tetrapetala	waxflower	5
Lathyrus grimesii	Grimes vetchling	5
Lepidium davisii	Davis peppergrass	5
Lepidium montanum var. *nevadense*	Pueblo Valley peppergrass	5
Leptodactylon glabrum	Bruneau River prickly phlox; Owyhee p. p.	5
Lotus argyraeus var. *multicaulis*	scrub lotus	5
Lupinus holmgrenianus	Holmgren lupine	5
Mentzelia argillicola	Pioche blazingstar	5
Mentzelia mollis	smooth stickleaf	5
Mentzelia tiehmii	Tiehm blazingstar	5
Oryctes nevadensis	oryctes	5
Parthenium ligulatum	ligulate feverfew	5
Penstemon albomarginatus	white-margined beardtongue	5
Penstemon arenarius	Nevada dune beardtongue	5
Penstemon bicolor ssp. *bicolor*	yellow twotone beardtongue	5
Penstemon bicolor ssp. *roseus*	rosy twotone beardtongue	5
Penstemon concinnus	Tunnel Springs beardtongue	5
Penstemon floribundus	Cordelia beardtongue	5
Penstemon fruticiformis ssp. *amargosae*	Death Valley beardtongue; Amargosa bush penstemon	5
Penstemon pahutensis	Pahute Mesa beardtongue	5
Penstemon palmeri var. *macranthus*	Lahontan beardtongue	5
Penstemon pudicus	bashful beardtongue	5
Penstemon tiehmii	Tiehm beardtongue	5
Phacelia beatleyae	Beatley scorpion plant	5
Phacelia filiae	overlooked phacelia; Clarke phacelia	5

Phacelia inundata	playa phacelia	5
Phacelia minutissima	least phacelia; dwarf phacelia	5
Phacelia monoensis	Mono phacelia	5
Phacelia parishii	Parish phacelia; playa p.	5
Pinus washoensis	Washoe pine	5
Plagiobothrys glomeratus	altered andesite popcornflowe r	5
Porophyllum pygmaeum	pygmy poreleaf	5
Potentilla cottamii	Cottam cinquefoil	5
Salvia dorrii var. *clokeyi*	Clokey mountain sage; C. purple sage	5
Sclerocactus blainei	Blaine pincushion; B. fishhook cactus	5
Sclerocactus nyensis	Nye pincushion	5
Sclerocactus schlesseri	Schlesser pincushion; S. fishhook cactus	5
Silene nachlingerae	Jan's catchfly; Nachlinger catchfly	5
Sphaeralcea caespitosa var. *williamsiae*	Railroad Valley globemallow	5
Streptanthus oliganthus	Masonic Mountain jewelflower; M. M. twistflower	5
Stroganowia tiehmii	Tiehm stroganowia	5
Tonestus graniticus	Lone Mountain tonestus	5
Townsendia jonesii var. *tumulosa*	Charleston grounddaisy	5
Trifolium andinum var. *podocephalum*	Currant Summit clover	5
Trifolium leibergii	Leiberg clover	5
Viola lithion	rock violet	5

APPROVED BY

Signed by:
Robert V. Abbey
State Director, Nevada
U.S. Bureau of Land Management
07-01-03
Date

Signed by:
R. Michael Turnipseed, P.E.
Director, Nevada Department of
Conservation and Natural Resources
07-10-03
Date

Signed by:
Terry R. Crawforth
Director, Nevada Department of Wildlife
07-14-03
Date

APPENDIX H

Air Quality Modeling Report

BARRICK GOLD U.S., INC.
BALD MOUNTAIN MINE
WHITE PINE COUNTY, NEVADA

AIR QUALITY IMPACT ASSESSMENT REPORT

February 2008

Prepared for

Barrick Gold U.S., Inc.
Bald Mountain Mine
P.O. Box 2706
Elko, Nevada 89503

Prepared by

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Reno, Nevada 89502

BARRICK GOLD U.S., INC.
BALD MOUNTAIN MINE
WHITE PINE COUNTY, NEVADA

AIR QUALITY IMPACT ASSESSMENT REPORT

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

BARRICK GOLD U.S., INC.
BALD MOUNTAIN MINE
WHITE PINE COUNTY, NEVADA

AIR QUALITY IMPACT ASSESSMENT REPORT

1. INTRODUCTION

Barrick Gold U.S., Inc. (BGI) has proposed to combine the Bald Mountain Mine (BMM) and the Mooney Basin Plan areas into one Plan of Operations boundary called the North Operations Area (Proposed Action). The Proposed Action has several components described in BGI Amendment to Plans of Operations (Plan) (PDI 2006). This analysis considers the impacts from the operation of stationary and mobile equipment that constitute a part of the regular activities of the mining process. The purpose of the Proposed Action is to continue to extract gold from mined ore within the BMM and Mooney Basin areas (Project Area). The Proposed Action is designed to optimize the development of gold mineralization with the existing processing facilities. It includes the expansion and/or development of the North Operations Area boundary by 3,738 acres to encompass a total boundary of 16,465 acres. Within the BMM Plan boundary area the Proposed Action includes the following: expansion of the North Pit 1, North Pit 2, North Pit 3, Rat Pit, Top/Sage Pit Complex, and the BMM No. 2/3 Heap Leach Pad; expansion of the Rock Disposal Areas (RDAs) including North 1, North 4, Rat West, South Water Canyon, and East Sage; and development of RDAs North 2, North 3, North 5, and Sage Flat. The Proposed Action within the Mooney Basin Plan boundary will include the following: expansion of the East Bida Pit, Belmont Pit 2, Sage Pit, and Mooney Heap Leach Pad; and development of Belmont Pit 3 and new Mooney process facilities and ponds. The Proposed Action also entails the expansions and new construction of haul roads, expansion of interpit areas, and development of growth media stockpiles within the Project Area. The development and expansion of the Project Area would result in up to an additional 12 years of mining and processing.

1.1. Purpose

The purpose of this Air Quality Impact Assessment Report (Report) is to assess the potential impacts to air quality resulting from the Proposed Action. This assessment has been prepared by Enviroscientists, Inc. (Enviroscientists) for use in the Bald Mountain North Operations Area EIS (EIS) and the methodologies used are consistent with National Environmental Policy Act (NEPA) guidelines developed by the Council on Environmental Quality (CEQ) and the Bureau of Land Management (BLM), the federal lead agency for the preparation of the EIS.

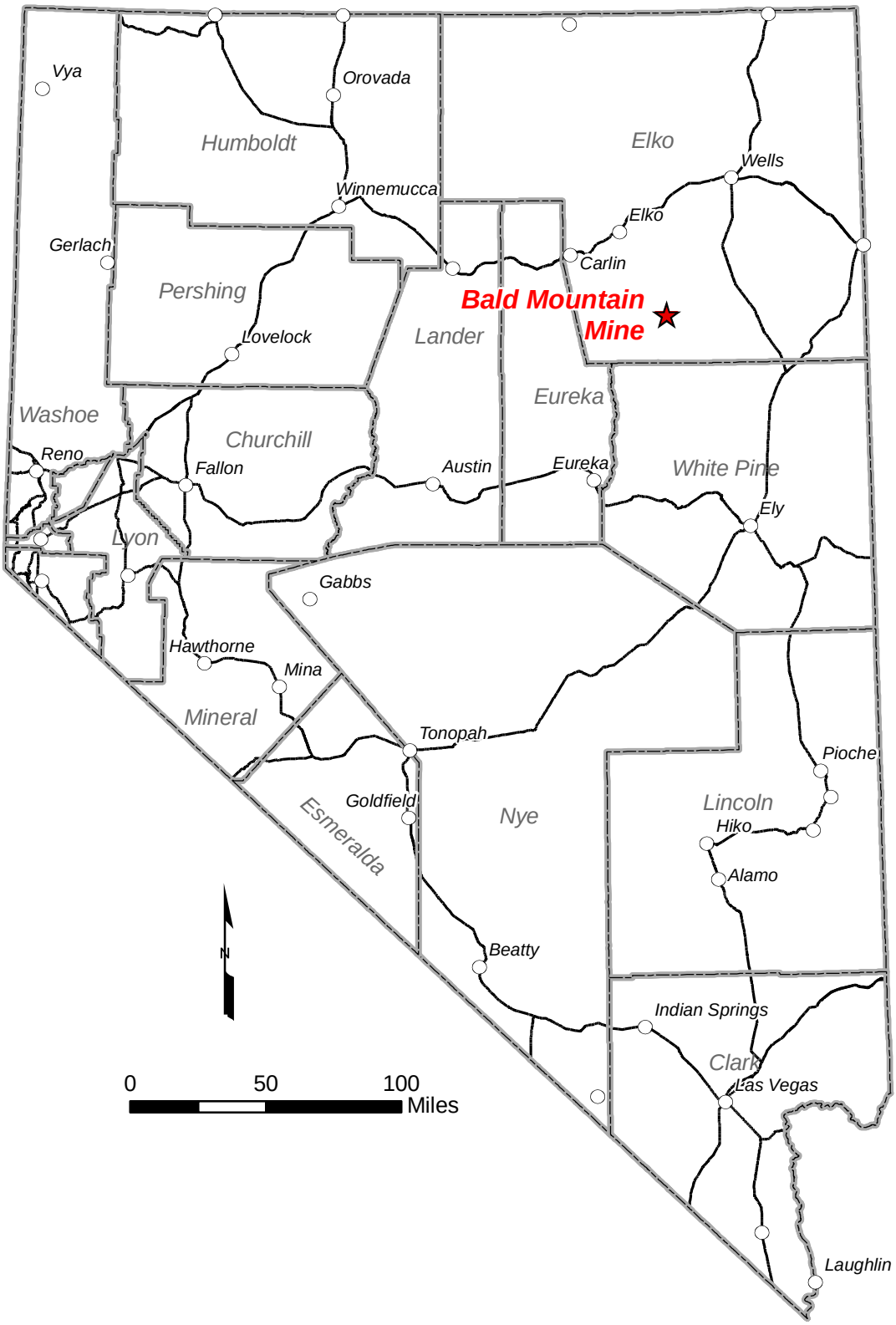


Figure 1.1. General Location Map

1804GeneralLocationMap.mxd

1.2. Project Location

The Project is located approximately 65 miles northwest of Ely, Nevada, in White Pine County (Figure 1.1). The Project can be reached from four different access routes. Directions are as follows: from Elko, Nevada, State Highway 228 (Jiggs Highway) south; from Eureka, Nevada, Highway 50 to State Highway 892 (Strawberry Highway); and from Ely, State Highway 50 to State Highway 892 (Strawberry Highway); or alternatively using State Highway 50 to Long Valley Road. The Project Area is located within Township 24 North, Ranges 56, 57, and 58 East and Township 23 North, Ranges 57 and 58, Mount Diablo Base and Meridian (MDB&M). The Project Area comprises approximately 16,465 acres of unpatented mining claims owned, leased, or controlled by BGI on BLM administered public or private land. Figure 1.2 depicts the Project's primary operational centers along the southern Ruby Mountains in portions of Ruby, Newark, Long, and Huntington Valleys.

1.3. Project Description

The Proposed Action is the unification of the BMM and Mooney Basin operations into the North Operations Area. (Figure 1.3). The total proposed disturbance is 7,968 acres, which includes 3,808 acres of new disturbance primarily in the BMM area. The activities associated with the Proposed Action that have a potential to impact air quality consist of the following: expansion and development of the BMM area open pits with its associated heap leach and RDAs; the expansion of the Mooney Basin plan area open pits and associated RDAs, heap leach facilities, and the refinery processing facilities. Based on the Plan, an optimum operating scenario of the two larger open pits, North and Top/Sage Complex, are considered under the Proposed Action. The daily mining rate in the North Pit will average 95,000 tons per day while the Top/Sage complex open pit will average 125,000 tons per day. Figure 1.3 depicts the various Project components. The associated in-pit handling, ore handling, waste handling, heap leaching, refinery, crushing circuit, storage tanks, and a related operational sources of emissions are addressed in this report.

Explanation

Sensitive Receptor

Proposed BMM 2006 PoO Boundary

0 2.5 5 7.5 10 Kilometers

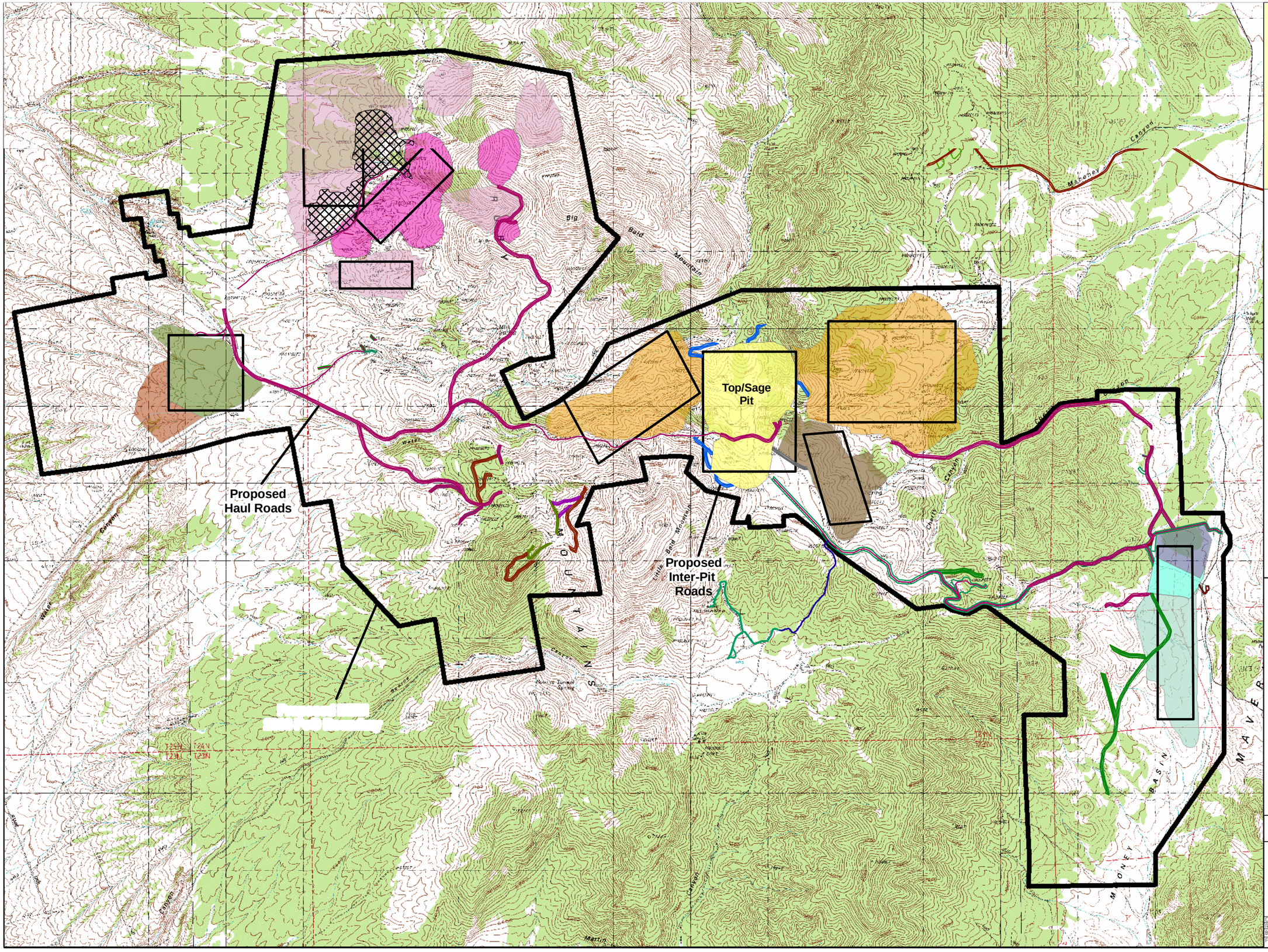
0 2 4 6 8 Miles

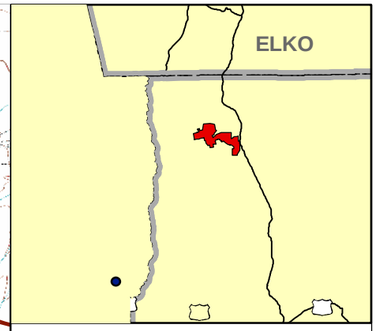
1:225,000

Projection: NAD 27, UTM Zone 11

Date:	Drawn By:
Revised:	Project No.:
Base Map:	
File Name:	

Enviroscientists, Inc.





Explanation

- Modeled sources
- Proposed Top Sage Pit Boundary
- Existing Mooney Leachpad Boundary
- Proposed Mooney Leachpad Boundary
- Authorized BMM Pad 2/3 Expansion Area
- Proposed Top Sage RDA Dump Boundary
- Existing North Area RDA Dump Boundary
- Proposed BMM 2006 PoO Boundary
- Proposed North Area RDA Dump Boundary
- Old Proposed Top Sage RDA Dump Boundary
- Proposed North area pit
- Proposed BMM Processing Pad 2/3 Expansion Boundary
- Authorized Mooney Leachpad Expansion Area Boundary

0 500 1,000 1,500 2,000 Meters

0 1,750 3,500 5,250 7,000 Feet

1:45,000

Projection: NAD 27, UTM Zone 11

N

Barrick Gold U.S., Inc.

Bald Mountain Mine

Project Components

Figure 1.3

Date:	Drawn By:
Revised:	Project No.:
Base Map:	
File Name:	1804_BaldMtn_Fig1_3.mxd

Enviroscientists, Inc.

2. REGULATORY FRAMEWORK

Ambient air quality and the emission of air pollutants are regulated under both federal and State of Nevada laws and regulations. The following is a discussion of these requirements.

2.1. Federal Clean Air Act

The Federal Clean Air Act (CAA), and the subsequent Federal Clean Air Act Amendments of 1990 (CAAA), require the Environmental Protection Agency (EPA) to identify national ambient air quality standards (NAAQSs) to protect public health and welfare. The CAA and the CAAA established NAAQSs for seven pollutants, known as "criteria" pollutants because the ambient standards set for these pollutants satisfy "criteria" specified in the CAA. A list of the criteria pollutants regulated by the CAA, and their currently applicable NAAQSs set by the EPA for each, are listed in Table 2.1.

The list of criteria pollutants was amended by the EPA on July 18, 1997, to include two new standards for particulate matter of aerodynamic diameter less than 2.5 micrometers ($PM_{2.5}$), and to revise the standards for PM_{10} and O_3 (see 62 *Federal Register* 38652-38760 [$PM_{2.5}$ and PM_{10}]; 62 *Federal Register* 38856-38896 [O_3]). In April 2005, EPA published a final list of $PM_{2.5}$ nonattainment areas (70 *Federal Register* 19844). Local regulatory agencies were allowed three years to submit an implementation plan for those areas designated as nonattainment of the $PM_{2.5}$ standard (70 *Federal Register* 65983-66067). No areas in Nevada were designated as nonattainment of the $PM_{2.5}$ standard. Currently, the EPA is considering revising the particulate standards (71 *Federal Register* 2620). If revised, the new particulate standards may not be implemented until 2020. Since there is a lack of sufficient data to develop a comprehensive emissions inventory, the $PM_{2.5}$ standard will not be addressed in this document.

Pursuant to the CAA, the EPA has developed classifications for distinct geographic regions known as Air Pollution Control Regions (APCRs). In Nevada, the APCRs are largely coincident with hydrographic basins. Under these classifications, for each federal criteria pollutant, an area (an APCR or portion there of) is classified as in "attainment", if the area has "attained" compliance with (that is, not exceeded) the adopted NAAQS for that pollutant, is classified as "non-attainment" if the levels of ambient air pollution exceed the NAAQS for that pollutant, or is classified as “maintenance” if the monitored pollutants have fallen from non-attainment levels to attainment levels. Areas for which sufficient ambient monitoring data are not available are designated as "attainment, unclassifiable" for those particular pollutants.

In addition to the designations relative to attainment of conformance with the NAAQS, the CAA requires the EPA to place selected areas within the United States into one of three classes, which are designed to limit the deterioration of air quality when it is “better than” the NAAQS. “Class I” is the most restrictive air quality category, and was created by Congress to prevent further deterioration of air quality in National Parks and Wilderness Areas of a given size, which were in existence prior to 1977, or those additional areas that have since been designated Class I under federal regulations (40 Code of Federal Register (CFR) 52.21). All remaining areas outside of the designated Class I boundaries were designated Class II areas, which allow a relatively greater deterioration of air quality, although still below NAAQSs. No Class III areas have been designated.

Table 2.1: Federal and State Ambient Air Quality Standards for Criteria Pollutants

Criteria Pollutant	Averaging Period	Nevada Standards	Federal Standards	
		Concentration[a]	Primary[a]	Secondary[a]
Ozone (O_3)	1-Hour	120 ppbv (235 µg/m^3)	120 ppbv (235 µg/m^3)	Same as Primary Standards
	8-Hour	---	80 ppbv (157 µg/m^3)	
Carbon Monoxide (CO)	8-Hour (<5,000') [b]	9 ppmv (10 mg/m^3)	9 ppmv (10 mg/m^3)	---
	8-Hour (≥5,000') [b]	6 ppmv (6.67 mg/m^3)	9 ppmv (10 mg/m^3)	
	1-Hour [b]	35 ppmv (23 mg/m^3)	35 ppmv (40 mg/m^3)	
Nitrogen Dioxide (NO_2)	Annual	100 µg/m^3 (53 ppbv)	100 µg/m^3 (53 ppbv)	Same as Primary Standards
Sulfur Dioxide (SO_2)	Annual	80 µg/m^3 (30 ppbv)	80 µg/m^3 (30 ppbv)	---
	24-Hour [b]	365 µg/m^3 (140 ppbv)	365 µg/m^3 (140 ppbv)	---
	3-Hour [b]	1,300 µg/m^3 (500 ppbv)	---	1,300 µg/m^3 (500 ppbv)
Particulate Matter ≤ 10 Microns in Aerodynamic Diameter (PM_{10})	24-Hour [b]	150 µg/m^3	150 µg/m^3	Same as Primary Standards
	24-Hour (Based on the 99th Percentile Averaged over Three Years)	---	150 µg/m^3	
	Annual Arithmetic Mean	50 µg/m^3	50 µg/m^3	
Particulate Matter ≤ 2.5 Microns in Aerodynamic Diameter ($PM_{2.5}$)	24-Hour (Based on the 98th Percentile Averaged over Three Years)	---	65 µg/m^3	
	Annual Arithmetic Mean Averaged Over Three Years	---	15 µg/m^3	
Lead (Pb)	Calendar Quarter	1.5 µg/m^3	1.5 µg/m^3	Same as Primary Standards

[a] Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm mercury. Measurements of air quality are corrected to a reference temperature of 25°C and a reference pressure of 760 mm mercury (1,013.2 millibar); ppmv and ppbv in this table refer to parts per million by volume and parts per billion by volume, respectively, or micro-moles of pollutant per mole of gas. µg/m^3 ≡ micrograms per cubic meter.

[b] A violation of the federal standard occurs on the second exceedence during a calendar year; a violation of the State of Nevada standard occurs on the first exceedence during a calendar year.

Federal Prevention of Significant Deterioration (PSD) regulations limit the maximum allowable increase in ambient particulate matter in a Class I area resulting from a major or minor stationary source to five µg/m^3 (annual geometric mean) and ten µg/m^3 (24-hour average). Increases in other criteria pollutants are similarly limited. Specific types of "listed facilities" that emit, or have the potential to emit, 100 tons per year or more of PM, PM_{10}, or other criteria air pollutants, or any

facility that emits, or has the potential to emit, 250 tons per year or more of PM, PM_{10}, or other criteria air pollutants, is considered a major stationary source. However, fugitive emissions are not counted as part of the determination of major source status for PSD for non-listed facilities, such as gold mines. Major stationary sources are required to notify federal land managers of Class I areas within 100 kilometers of the major stationary source. There are no Class I areas within 100 kilometers of the Project Area. The nearest Class I planning area to the Project Area, the Jarbidge Wilderness Area, is located approximately 130 miles (210 kilometers) north of the Project Area. Neither the existing BMM project air pollutant emission sources, nor the Proposed Action emission sources, are major stationary sources subject to PSD regulatory requirements.

The Class II pollution concentration limits are triggered for a planning area when an application for a major source affecting that planning area has been deemed complete by the regulatory authority (40 CFR 52.21[b][14]). The closest triggered Class II planning area (APCR 179) is located approximately 25 miles (40 kilometers) east of the Facility. The planning area in which the Facility is located has not been triggered for any pollutant.

New Source Performance Standards (NSPSs), also required under the CAA, are set by the EPA for specific types of new or modified stationary sources. NSPSs set fixed emission limits for classes of sources to prevent deterioration of air quality from the construction of new sources and to reduce control costs by building pollution controls into the initial design of sources. In establishing NSPSs, the EPA is required to consider cost, non-air impacts, and energy requirements. Certain Project units used to process metallic minerals are subject to the NSPSs found in 40 CFR Part 60, Subpart LL (Standards of Performance for Metallic Mineral Processing Plants).

The CAAA introduced a new a facility-wide permitting program known as the Federal Operating Permit, or "Title V", program, that requires facilities with the potential to emit more than 100 tons per year (tpy) of any regulated pollutant (excluding PM), ten tpy of any single hazardous air pollutant (HAP), or 25 tpy or more of any combination of HAPs, sources of air pollutants submit a Federal Operating Permit application.

The CAA directs the EPA to delegate primary responsibility for air pollution control to state governments, which comply with certain minimum requirements. State governments, in turn, often delegate this responsibility to local or regional governmental organizations. The State Implementation Plan (SIP) was originally the mechanism by which a state set emission limits and allocated pollution control responsibility to meet the NAAQSs. The function of a SIP broadened after passage of the CAAA, and now includes the implementation of specific technology-based emission standards, permitting of sources, collection of fees, coordination of air quality planning, and prevention of significant deterioration of air quality within regional planning areas and statewide. Section 176 of the CAA, as amended, requires that federal agencies must not engage in, approve, or support in any way any action that does not conform to a SIP for the purpose of attaining ambient air quality standards (Wooley 1998).

2.2. Nevada State Air Quality Program

The Bureau of Air Pollution Control (BAPC) is the agency in the State of Nevada that has been delegated the responsibility for implementing a SIP (excluding Washoe and Clark Counties, which have their own SIP). Included in the SIP are the State of Nevada air quality permit programs (NAC 445B.001 through 445B.3497, inclusive). Also part of the SIP are the Nevada State Ambient Air Quality Standards (NSAAQSs). The NSAAQSs are generally identical to the NAAQSs, with the exception of the following: (a) an additional standard for carbon monoxide (CO) in areas with an elevation in excess of 5,000 feet above sea level; (b) the recently promulgated NAAQSs for $PM_{2.5}$ (Nevada has yet to adopt the new standards); (c) the revised NAAQS for particulate matter of aerodynamic diameter less than ten microns (PM_{10}); (d) ozone (O_3) (Nevada has yet to adopt the new and revised standards); and (e) a violation of a state standard occurs with the first annual exceedance of an ambient standard, while federal standards are generally not violated until the second annual exceedance. In addition to establishing the NSAAQSs, the BAPC is responsible for permit and enforcement activities throughout the State of Nevada.

The Project Area is located in White Pine County, Nevada. The regulatory authority for air quality within White Pine County is the BAPC. Before any construction of a potential source of air pollution can occur, an air quality permit must be obtained from the BAPC.

The BAPC permitting program implements the Title V federal operating permitting program, as well as the minor source permitting program for facilities that emit less than 100 tons per year of all criteria pollutants and are not a major source of HAP. BMM's current operations are regulated by three air quality operating permits. Operations at the BMM are permitted under BAPC's minor source permitting program via air quality operating permit AP1041-1362. The crushing circuit located at the BMM project area is permitted under permit AP1611-2227 for a temporary sand and gravel processing. The Mooney Basin project operations were permitted under a Class III air quality operating permit AP1041-1336.

BMM, in concert with the BAPC, the EPA, and three other mining companies participated in the Voluntary Mercury Reduction Program from 2001 to 2005. Using the data collected from that program, the BAPC implemented the Mercury Control Program (MCP) in March 2006. The MCP is designed to control mercury emissions from thermal units located at precious metal mines and mills. In the initial phase of the MCP, data on thermal units and their controls are being collected throughout Nevada. This will be followed by the development of Maximum Achievable Control Technology (MACT) standards for each type of thermal unit. The installation of MACT control devices will be the minimum requirement of the ensuing mercury permitting program under the MCP.

3. EXISTING CONDITIONS

3.1. Meteorological Setting

The Project Area is a high desert environment characterized by arid to semiarid conditions with bright sunshine, low annual precipitation, and large daily ranges in temperatures. The climate is controlled primarily by rugged and varied topography to the west, and specifically the Sierra Nevada Mountain Range. Prevailing westerly winds move warm, moist Pacific air over the western slopes of the Sierra Nevada Mountain Range where the air cools, condensation takes place, and most of the moisture falls as precipitation. As the air descends the eastern slopes of the Sierra Nevada Mountain Range, compressional warming takes place, resulting in minimal rainfall.

Meteorological information for the BMM was taken from data collected by the National Weather Service (NWS) at Elko, Nevada, (station KEKO-725825 - elevation 1548.4 meters) that is located 59 miles (95 kilometers) northwest of the Project Area (Figure 1.1). The meteorological data files were provided by the BAPC. Based on meteorological monitoring data collected from the NWS Elko station during 2005, the average temperature was 46.9 degrees Fahrenheit (°F), with temperatures ranging from 100°F to minus 6°F. Annual precipitation during the same period ranged from 0.33 to 1.10 inches.

Atmospheric dispersion is influenced by several parameters, including wind speed, temperature inversions (mixing heights), and atmospheric stability. Prevailing winds at the NWS Elko Station, based on the 2005 meteorological data, were from the southwest with average annual wind speeds at 8.3 miles per hour (mph). Month-to-month variations were small, with average wind speeds ranging from 3.2 to 6.7 mph. These wind speeds tend to promote atmospheric mixing, and generally transport locally generated air emissions away from the area.

Inversions restrict vertical movement of the air in the lower atmosphere, thereby preventing atmospheric pollutants from mixing with the air above the inversion layer. Efficient mixing is affected by seasonal and diurnal variations. In a regional pollution study, typical seasonal patterns in Winnemucca, Nevada, northwest of the Project Area and within the same climate zone, have fall and winter mixing heights ranging from 300 meters to 900 meters on average (USDA-FS 2003). The lower mixing heights during the winter pose less of a concern due to lower temperatures and night steered surface level winds that promote circulation and dispersal of pollutants. Average spring and summer mixing heights ranged between 1,800 meters and 2,400 meters. The high mixing heights can be attributed to inland continental warming in conjunction with diurnal patterns that promote air movement.

Atmospheric stability is expressed in terms of Pasquill-Gifford categories, which range from Class A (very unstable) to Class F (very stable). These categories describe the degree of atmospheric turbulence, which leads to atmospheric mixing and the dispersion of pollutants. The greater the atmospheric instability, the greater the tendency to disperse emitted air pollutants. Meteorological data from the NWS Elko station indicate that good dispersion conditions (Class A through Class D) occurred 74 percent of the time during the year 2005, and are believed to be representative of conditions at the Project Area.

3.2. Existing Air Quality

Air quality in the Project Area is governed by pollutant emissions and meteorological conditions. As discussed in Section 3.1, wind speeds, inversions, mixing heights, and stability all affect the circulation and dilution of pollutant emissions in the area.

The Project Area is located within four planning areas. The areas include Huntington Valley, Ruby Valley, Long Valley, and Newark Valley Planning Areas. All areas are currently unclassified or designated as attainment for all pollutants having a federal air quality standard (40 CFR 81.329). No NO_2 or lead nonattainment areas are located within the State of Nevada. Washoe County, Nevada, (within which the city of Reno is located) is the PM_{10}, and CO, O_3 nonattainment area located closest to the Project Area, although it is situated more than 100 miles (167 kilometers) to the northwest. With the reclassification of Steptoe Valley nonattainment area to attainment for SO_2, there are no SO_2 nonattainment areas located in Nevada. Washoe County was designated as a marginal O_3 nonattainment area for the one-hour standard. However, the EPA classified Washoe County as attainment for the eight-hour standard. The only eight-hour O_3 nonattainment area in Nevada is a portion of Clark County.

4. AIR QUALITY ASSESSMENT

4.1. Air Quality Assessment Methodology

Dispersion modeling is an accepted method of assessing potential impacts from proposed pollutant sources. The methods used in this air quality assessment are for a worst case scenario which includes impacts from the operations associated with the North Pit and Top/Sage Complex open pits, RDAs, heap leaching, and roads. Average operational times of one, three, eight, 24, and 8,760 hours, were utilized to appropriately demonstrate compliance with the NAAQSs and NSAAQSs.

4.1.1. Model Selection and Options

The EPA's designation of AERMOD as the preferred air dispersion model became effective on December 9, 2005. Therefore, AERMOD (version 07026) was selected for this analysis. The Trinity Consultants' BREEZE AERMOD v6.1.29 modeling manager was utilized to prepare the input files and manage the processing.

Dispersion models use mathematical equations to simulate the transport and diffusion of emitted pollutants within the atmosphere, and can calculate air pollutant concentrations at any discrete location. Air pollutant emissions may be from point sources (such as stacks or vents); volume sources (such as buildings or elevated conveyors); area sources (regions with a distinct square footage and little or no vertical velocity, such as a lagoon or heap); or open pit sources (below-grade operations such as an open pit mine). Non-reactive gasses, or particles such as PM_{10}, which behave like gases, emitted from these sources are modeled based on a Gaussian distribution, which is a relatively good mathematical approximation of plume behavior (Schulze 1991).

According to the Guideline on Air Quality Models (as revised) (40 CFR 51, Appendix W), the AERMOD Model is approved for use in calculating ambient air pollutant concentrations resulting

from the emissions of sources such as those within the Project Area and with terrain similar to that found within and adjacent to the Project Area. The AERMOD model used in this analysis (version 07026) includes the Plume RIse Model Enhancement (PRIME) downwash algorithms that are used to calculate plume downwash from stack emission caused by wind flowing over and around nearby buildings.

The dispersion modeling used the EPA's regulatory default model options as outlined in Appendix A of the Guideline on Air Quality Models (as revised).

The following additional model options were used:

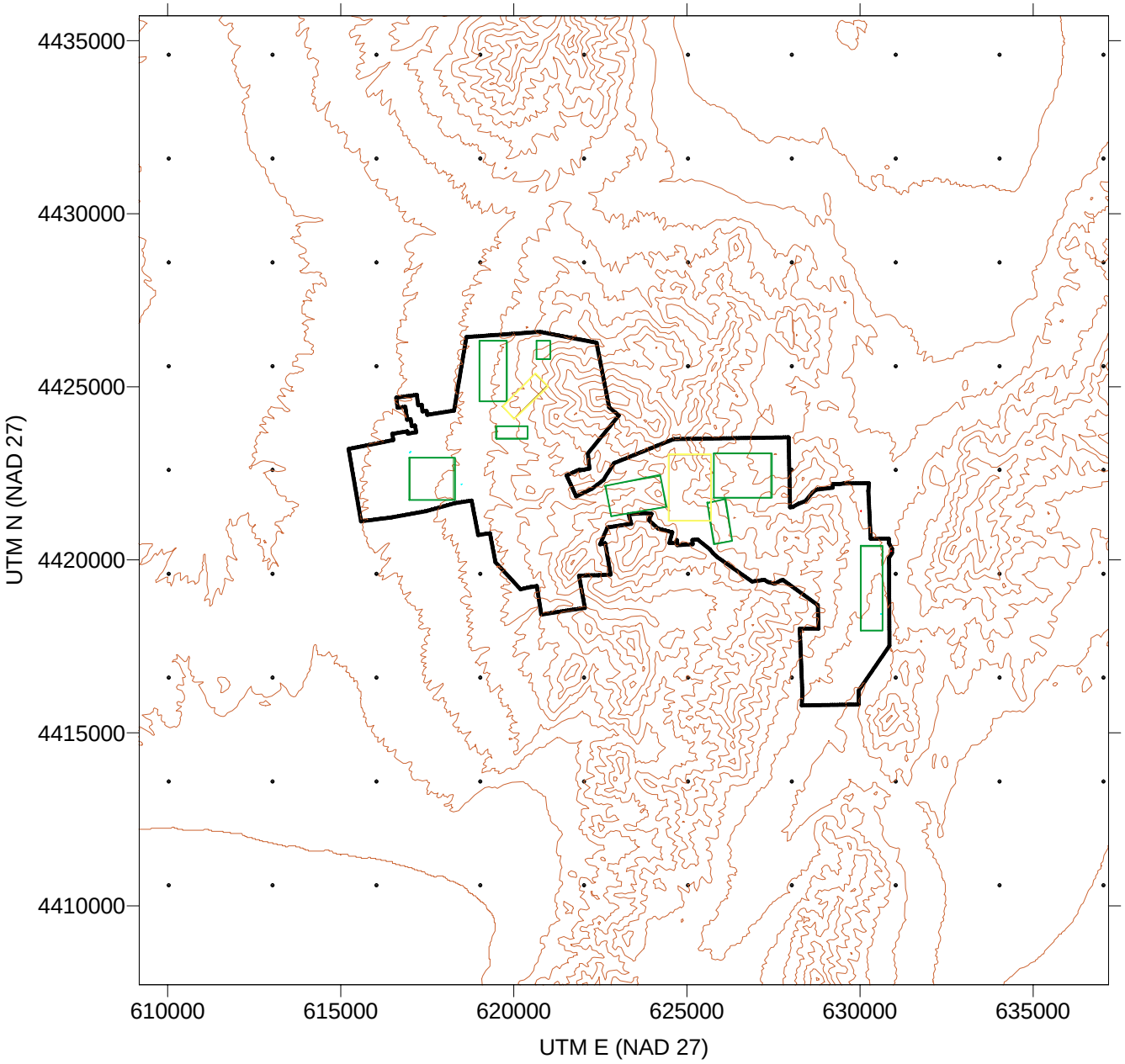
- Rural dispersion parameters; and
- Concentration values calculated for elevated terrain and surface-based receptors (no flagpole receptors).

4.1.2. Receptors

Three different classes of receptors were used in the final modeling. The first class was a discrete, "fenceline" receptor set, consisting of individual receptors placed at 100-meter intervals along the Plan boundary. The Plan boundary represents the Project Area not accessible to the public (generally fenced areas or where other features prevented public access). The second class of receptors consisted of receptor "grids," the size and spacing of which were designed to cover the entire Project Area and a larger area outside of the Project Area, which was potentially accessible to the public. A large Cartesian receptor grid was utilized, with receptors spaced at 3,000 meter intervals, extending out approximately 23 kilometers (km) to the north, 21 km to the east, 50 km to the south and 62 km to the east from all stationary sources. The receptor grid was approximately 102 km by 72 km with an additional rectangular extension to the northeast of 39 km by 12 km to capture additional receptors.

AERMOD requires preprocessing of the receptors through the AERMAP subprogram. AERMAP evaluates local topography in the vicinity of each receptor and assigns additional attributes to each one that allows AERMOD to better calculate terrain effects.

The third class of receptor was defined as a discrete receptor point used to assess the potential impact of the Project on the Ruby Lake National Wildlife Refuge, a specific sensitive receptor. For the purpose of this assessment, a receptor was chosen at the Gallagher State Fish Hatchery, as an area in close proximity that is frequently visited by the public and has nearby residences. The elevation for the receptor was obtained from the appropriate 30-meter DEMs represented by a single modeling point.



EXPLANATION

Green Rectangles are Area Sources,
Tan Rectangles are Open Pit Sources, and Volume are Red.
Black Points Represent Receptors.

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Reviewed By: AMD, RFD

Modeled Sources

Figure 4.1

Elevations for each of these three classes of receptors were taken from the U.S. Geological Survey (USGS) Digital Elevation Model (30-meter DEM) data for 7.5 minute series (topographic) maps, as applicable. The complete list of DEM quadrangles utilized can be found in Appendix C.

4.1.3. Meteorological Data

Surface meteorological data representative of the Project Area is a required input dataset for AERMOD. One year (January 2005 through December 2005) of processed met data collected in Elko, Nevada, by the NWS was chosen because of its high quality and surface station location. The meteorological data was recommended and provided by the BAPC.

4.1.4. Modeled Pollutants and Assumptions

Dispersion modeling was conducted for four of the criteria air pollutants PM_{10}, CO, NO_2, and SO_2. Table 4.1 presents all four pollutants, for all applicable averaging times, and for a total of eight pollutant-averaging time combinations that were considered.

Table 4.1: Air Pollutants and Applicable Averaging Times for the Air Quality Modeling

Pollutant	Averaging Time
Particulate Matter of Aerodynamic Diameter less than 10 Micrometers (PM_{10})	24-Hour Annual
Carbon Monoxide (CO)	1-Hour 8-Hour
Nitrogen Dioxide (NO_2)	Annual
Sulfur Dioxide (SO_2)	3-Hour 24-Hour Annual

Dispersion modeling was actually performed for oxides of nitrogen (NOx), rather than nitrogen dioxide (NO_2), the pollutant for which ambient standards have been adopted. In general, NOx consists of NO_2 and other oxides of nitrogen; thus, an assessment using NOx results is a conservative assessment which tends to over predict the anticipated ambient concentrations of NO_2 resulting from the facility.

A screening model was employed for O_3 (ozone). The Scheffe screening model (Scheffe 1988) was used to evaluate the Facility's potential to contribute to low-level O_3 concentrations, and to demonstrate compliance with the one-hour O_3 standard. The Facility does not directly produce O_3. O_3 is produced by photo-chemical reactions involving certain volatile organic compounds (VOCs) and NOx. The emission of these compounds can be calculated and used in the Scheffe screening model to evaluate potential O_3 generation.

Modeling was not performed for the criteria pollutants $PM_{2.5}$, lead (Pb), or O_3 (for the eight-hour standard). Lead emissions from the Project are considered to be negligible; therefore, no analyses were performed with respect to Pb. At the time of the preparation of this Report, BAPC has not implemented the $PM_{2.5}$ standard or the eight-hour O_3 standard. Only the one-hour O_3 standard was considered.

4.1.5. Background Concentrations

To assess the impact of the Project on the ambient air quality, it was necessary to also account for existing, or background, levels for each pollutant. BAPC guidance (http://ndep.nv.gov/bapc/qa/model.html) recommends using appropriate annual average PM_{10} concentrations as a suitable background value to approximate pre-existing PM_{10} concentrations. No monitoring station is located in close proximity to the BMM; therefore, PM_{10} emissions concentrations consistent with BAPC guidance for facilities in rural settings is utilized. A background concentration of 10.2 $\mu g/m^3$ was added to the 24-hour PM_{10} model results, and 9.0 $\mu g/m^3$ was added to the modeled annual PM_{10} emissions.

In addition, no monitoring has been performed in proximity to the BMM for ambient concentrations of CO, NO_2, O_3, or SO_2, nor does the BAPC specify background concentrations for these pollutants. However, background values are used for the purpose of NEPA analysis. Most air pollutant monitoring is undertaken in locations with relatively high population density where high pollutant levels might be expected. Almost all of the monitoring conducted by the State of Nevada is done in the Reno/Carson City or Las Vegas areas. Monitoring data from throughout the United States is available at the EPA Air Data web site (http://www.epa.gov/air/data/index.html). Monitoring data from most of the western states were reviewed, and the most suitable surrogates considered for each pollutant. Not all monitoring sites monitor all of the criteria pollutants. Table 4.2 lists the pollutant, timeframe, monitor location, years of data reviewed, and assumed background value based on the first-high value from the years reviewed. The first-high value from the monitoring data was used rather than the second-high value because the state of Nevada uses the more stringent first-high value to determine compliance with the ambient standards (see Table 2.1, footnote b).

Trona, California was chosen for background values for SO_2 and NO_2. Trona is a small desert town in southern California. Unfortunately, the monitoring at Trona does not include CO. Barstow, California, was chosen for CO, although this southern California town is located at the junction of two interstates and is a major railroad center. Monitored combustion emissions would be expected to be higher in Barstow than in Crescent Valley. All O_3 monitoring in southern California record very high ozone values. These values probably reflect local combustion sources, down-wind transport of pollutants from the Los Angeles basin, and persistent warm, sunny weather ideal for the creation of ozone. Craters of the Moon National Monument in Idaho was chosen for the background value for the one-hour O_3 standard. The monument is remote, and in a sagebrush dominated landscape similar to Crescent Valley.

Table 4.2: Background Values for Criteria Pollutants.

Pollutant and Averaging Time	Monitor Location	Years of Data Reviewed	Standard ($\mu g/m^3$)	Background Value ($\mu g/m^3$)
PM_{10} 24-Hour	*BAPC Default Value*	N/A	150	9.0
PM_{10} Annual	*BAPC Default Value*	N/A	50	10.2
CO One-Hour	Barstow, CA	2002-2005	40,000	3,771
CO Eight-Hour	Barstow, CA	2002-2005	10,000	1,666
NO_2 Annual	Trona, CA	2002-2005	100	9.43
SO_2 Three-Hour	Trona, CA	2002-2005	1,300	28.6
SO_2 24-Hour	Trona, CA	2002-2005	365	18.3
SO_2 Annual	Trona, CA	2002-2005	80	5.3
O_3 One-Hour	Craters of the Moon Nat'l Monument	2002-2005	235	141

4.2. Air Pollution Emission Sources and Emission Inventory

The existing facilities and the Project contain numerous sources of air pollutants. In order to analyze the impacts of the Proposed Action, assumptions had to be made in many different areas, including facility configuration, future haul road locations, and the quantities of material processed and/or handled at certain locations (such as how much material is transported per day to the BMM 2/3 leach pad, how much is transported to the RDAs, etc.). This report has quantified the emissions of the applicable criteria pollutants from the Proposed Action directly related to the processing of ore from the Project. Air emission estimates were made based on the following factors: 1) maximum material throughput; 2) EPA-approved emission factors obtained from EPA's "Compilation of Air Pollution Emission Factors" (5^{th} edition), otherwise known as EPA AP-42; 3) existing air quality permits and past air quality permit applications for both the Bald Mountain Mine project and the Mooney Basin; 4) facility descriptions (PDI 2006); and 5) information provided by BMM. A comprehensive list of identified individual potential sources of Project air pollutant emissions (emission units), organized into "emission groups" of similar activities (such as in-pit handling, heap leaching, etc.), are presented in Appendix A. In all, 113 activities and sources were considered for their pollutant emission potential. Appendix B contains the emission inventory of the Proposed Action for the 24-hour modeling period. Emission inventories for other periods are provided on CD in Appendix C.

Calculated air pollution emissions from the Proposed Action were based on the Project's daily maximum mining rate of 95,000 tpd in the BMM North pit for most pollutants. Emissions from processing ore at the Top/Sage pit are based on the proposed daily average processing rate of 125,000 tpd.

4.3. Air Quality Dispersion Modeling Analysis

4.3.1. Ambient Air Quality Standard Modeling

For the purpose of modeling the fugitive and combustion emissions from haul road traffic, the road network was divided into segments (Figure 1.3). The segments were determined by stretches of haul road with similar traffic loads. The usage of each of the segments differs by the various combinations of modeled haulage routes, based on different origins and destinations of the ore and waste. Appendices B and C contain general road segment data showing which segments were used by the different ore and waste haulage routes.

The modeled road segments that begin or end on rock disposal areas, leach pads, or in the open pit are modeled to approximately the center of these features. In order to model each of the roads effectively, some of these individual emission sources are modeled as part of the open pit model source, and others are modeled as part of the respective haul end-points (RDAs or leach pads).

Model emission rates for each of the individual model sources were calculated using the emission estimates presented in Appendix C. The dispersion model calculates ambient concentrations for each hour of the modeled time period, and thus appropriate hourly emission rates must be calculated for each modeled source for each modeled time period. For all sources that operate (or are assumed to operate) at a flat rate for the modeled time period, the appropriate hourly emission rate is the flat rate. However, the emission rate for any modeled source, which operates intermittently over the modeled time period must be "scaled" to avoid an inappropriate over estimation of the modeled ambient concentrations. Scaling allocates the total of all of the emissions from a source during the modeled time period (i.e., eight-hour, 24-hour, annual, etc.) equally over all of the hours in the modeled time period. For example, the BMM process facility emergency generators' maximum hourly NO_2 emissions are estimated to be 19.4 lbs/hour. The annual NO_2 emissions are limited by the air quality permit to operate a maximum of 500 hours per year. The scaled hourly emission rate can then be calculated by multiplying by the number of operating hours during the modeled time period and dividing by the number of total hours during the modeled time period:

$$\left(19.4\ \frac{lbs}{hr}\right)\left(\frac{\frac{500\ hours}{year}}{\frac{8{,}760\ hours}{year}}\right) = 1.11\ \frac{lbs}{hr} \quad (Scaled\ Hourly\ PM_{10}\ Emission\ Rate)$$

Finally, the scaled hourly emission rate is converted from pounds per hour to grams per second for use in the model:

$$\left(1.11\ \frac{lbs}{hr}\right)\left(\frac{1\ hour}{3{,}600\ seconds}\right)\left(\frac{453.6\ grams}{1\ pound}\right) = 1.40\ x\ 10^{-1}\ \frac{g}{s} \quad (Modeled\ Emission\ Rate)$$

The above methodology was used to calculate modeled emission rates for all sources for each of the model averaging times.

The dispersion modeling assumed an operational and facility configuration that simulated a realistic operational maximum scenario. In addition to the assumptions made to calculate the applicable emission rates (i.e., the BMM North pit was in full production of 95,000 tons mined per day), the heap leach pads and rock disposal areas were assumed to be built to their full proposed heights, the open pits were assumed to be at their full depth, which results in the maximum potential emissions from the haul trucks.

Emissions from those emission units located within one of the large area/open pit sources (leach pads, RDAs, and open pit mines) were combined with the larger emission source for the modeling. For example, emissions from dozers and haul trucks operating on the Mooney heap leach pad, as well as the haul road emissions on the leach pad, were added to the Mooney heap leach pad fugitive emissions to represent the total emissions from the Mooney heap leach pad.

The open pit source was used to model fugitive emissions from the activities in the two open pit mines included in the model. This source can only be used for particulate emissions. An area source was used to model gaseous emissions from vehicle operations and blasting in the open pit mines.

Model runs were conducted as follows for the Proposed Action. One separate model run was conducted for each combination of pollutant for the Proposed Action for appropriate averaging periods. One separate model run based upon four averaging periods of annual, 24-hour, one and 8-hour (CO only) and a three-hour (SO_2 only) was conducted for the Plan Boundary receptors and sensitive receptor at Gallagher State Fish Hatchery. Each model run calculated pollutant concentrations from a single source group consisting of all of the appropriate emission units. All emission parameters for each of the emission units were modeled as presented in the spreadsheets provided in Appendices B and C.

The Scheffe Screening model inputs and results can be found in Appendix C. The results cannot be applied to specific geographic locations, so the O_3 impacts are not considered for the Sensitive Receptors.

The results of the dispersion modeling for the Proposed Action are presented in Tables 4.3 for the modeled concentrations and the modeled concentration plus the background concentration. The tables shows the highest modeled results at any point of public access for all eight pollutant-averaging time combinations, the location (in UTM NAD 27 coordinates) of the highest modeled public access receptor, and the lowest applicable standard (NSAAQS or NAAQS) for each of the eight pollutant-averaging time combinations. Table 4.3 demonstrates that for all pollutant-averaging time combinations, the Proposed Action modeled ambient concentrations are below the applicable ambient standards and will not cause or contribute to a violation of a NSAAQS or NAAQS for PM_{10}, SO_2, CO, NO_2, or O_3 even with the addition of background concentrations.

Table 4.3: Highest Modeled Air Pollutant Concentrations from the Proposed Action

Pollutant	Averaging Time	Highest Modeled Receptor Point			Lowest Applicable Ambient Standard ($\mu g/m^3$)
		Receptor Location[1]		Dispersion Modeling Results ($\mu g/m^3$)[2]	
		UTM East (m)	UTM North (m)		
Particulate Matter of Aerodynamic diameter less than 10 micrometers (PM_{10})	24-Hour	630,964	4,420,316	79.6	150
	Annual	630,964	4,420,266	16.1	50
Sulfur Dioxide (SO_2)	3-Hour	630,886	4,418,190	487.9	1,300
	24-Hour	630,885	4,418,340	116.14	365
	Annual	623,571	4,421,339	8.47	80
Carbon Monoxide (CO)	1-Hour	620,362	4,426,563	7,966	40,000
	8-Hour (< 5,000')	626,482	4,423,522	5,255	10,000
	8-Hour (≥ 5,000')	626,482	4,423,522	5,255	6,667
Ozone (O_3)	1-Hour	-	-	197	235
Nitrogen Dioxide (NO_2)	Annual	623,571	4,421,339	77.3	100

[1] All coordinates in UTM projection, North American Datum 1927.
[2] Background values, as listed in Table 4.2 are included.

4.3.2. Plan Boundary Modeling

Model runs were conducted for the four averaging periods of annual, 24-hour, one and 8-hour (CO only) and a three-hour (SO_2 only) for the defined Plan Boundary receptors as discussed in Section 4.1.2. Each model run calculated pollutant concentrations from the source groups consisting of all of the appropriate emission units. The modeling results for the plan boundary receptors for the Proposed Action are presented in Table 4.4.The modeled concentrations in Table 4.4 do not include any background values.

The highest modeled 24-hour PM_{10} concentration from the Project emissions on the defined Plan Boundary receptor was 70.59 $\mu g/m^3$. The highest annual PM_{10} concentration from the Project emissions on the sensitive receptor was 5.90 $\mu g/m^3$.

Table 4.4: Highest Modeled Air Pollutant Concentration Impacts from the Proposed Action at the Defined Plan Boundary Receptors

Pollutant	Averaging Time	Highest Modeled Receptor Point			Lowest Applicable Ambient Standard ($\mu g/m^3$)
		Plan Boundary Receptor Location[1]		Dispersion Modeling Results ($\mu g/m^3$)	
		UTM East (m)	UTM North (m)		
Particulate Matter of Aerodynamic diameter less than 10 micrometers (PM_{10})	24-Hour	630,964	4,420,316	70.59	150
	Annual	630,964	4,420,266	5.90	50
Sulfur Dioxide (SO_2)	3-Hour	630,886	4,418,190	459.28	1,300
	24-Hour	630,885	4,418,340	97.84	365
	Annual	623,571	4,421,339	3.17	80
Carbon Monoxide (CO)	1-Hour	620,363	4,426,563	7,825	40,000
	8-Hour (< 5,000')	626,481	4,423,522	3,589	10,000
	8-Hour (≥ 5,000')	626,481	4,423,522	3,589	6,667
Ozone (O_3)	1-Hour	-	-	197	235
Nitrogen Dioxide (NO_2)	Annual	623,571	4,421,339	67.9	100

[1] All coordinates in UTM projection, North American Datum 1927.

4.3.3. Sensitive Receptor Modeling

As discussed in Section 4.1.2, an assessment was also made to estimate the potential impact of the Proposed Action on the selected sensitive receptor within the Ruby National Wildlife Refuge at the Gallagher State Fish Hatchery. Separate model runs were made for each of the averaging time periods with the eight pollutant combinations using only the defined sensitive receptors and the same dispersion modeling inputs used for the modeling previously discussed. The results of the modeling for the sensitive receptor for the Proposed Action are presented in Table 4.5. The modeled concentrations in Table 4.5 do not include any background values.

The highest modeled 24-hour PM_{10} concentration from the Project emissions on the defined sensitive receptor was 1.88 $\mu g/m^3$. The highest annual PM_{10} concentration from the Project emissions on the sensitive receptor was 0.048 $\mu g/m^3$.

Table 4.5: Highest Modeled Air Pollutant Concentration Impacts from the Proposed Action at the Defined Sensitive Receptor.

Pollutant	Averaging Time	Highest Modeled Concentration	Lowest Applicable Ambient Standard
		Gallagher State Fish Hatchery	
Particulate Matter of Aerodynamic Diameter of less than 10 Micrometers (PM_{10})	24-Hour	1.88	150 µg/m^3
	Annual	0.048	50 µg/m^3
Carbon Monoxide (CO)	1-Hour	486.92	40,000 µg/m^3
	8-Hour (< 5,000')	128.71	10,000 µg/m^3
	8-Hour (≥ 5,000')	128.71	6,667 µg/m^3
Nitrogen Dioxide (NO_2)	Annual	0.491	100 µg/m^3
Sulfur Dioxide (SO_2)	3-Hour	2.60	1,300 µg/m^3
	24-Hour	0.346	365 µg/m^3
	Annual	0.023	80 µg/m^3

Modeling was also performed to determine the concentrations of the gaseous pollutant emissions (SO_2, CO, and NO_2) from the Proposed Action on the defined sensitive receptors. The highest modeled concentration for each modeled air pollutant at the sensitive receptor for each applicable averaging time is also presented in Table 4.5. In all instances, the modeled concentrations are less than the applicable ambient air quality standard(s). Thus, further analyses for these pollutants are not warranted.

5. REFERENCES

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APPENDIX A

List of Sources Analyzed for the North Operations Area

Barrick Gold U.S., Inc. Bald Mountain Mine Amendment to PoO
North Operations Area: Bald Mountain/Mooney Basin
White Pine County, Nevada

Air Pollution Emission Inventory

Master List of All Modeled Sources and Pollutants

Emission Unit No.	Emission Unit Description	Pollutants
	Emission Unit Group 1: In- Pit Handling	
1.001	Drilling - Ore	PM_{10}
1.002	Drilling - Waste	PM_{10}
1.003	Ammonium Nitrate Prill Silo Loading	PM_{10}
1.004	Ammonium Nitrate Prill Silo Unloading	PM_{10}
1.005	Blasting - Ore	PM_{10}
1.006	Blasting -Waste	PM_{10}
1.007	Explosive Detonation - Ore Blasting	CO, SO_2, NOx
1.008	Explosive Detonation - Waste Blasting	CO, SO_2, NOx
1.009	Loading - Ore	PM_{10}
1.010	Loading - Waste	PM_{10}
1.011	Loaders (Pit) - ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
1.012	Hydraulic Shovel - ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
1.013	Rotary Drills - ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
1.014	Motor Grader - ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
1.015	Blasting Trucks - ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
1.016	Excavator- ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
1.017	Water Trucks - ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
1.018	Water Trucks - Fugitive Emissions	PM_{10}
	Emission Unit Group 2: Ore Handling	
2.001	Hauling of Ore - North Pit to BMM 2/3 Heap Leach Pad	PM_{10}
2.002	Hauling of Ore - Top/Sage Pit to BMM 2/3 Heap Leach Pad	PM_{10}
2.003	Hauling of Ore- Top/ Sage Pit to Mooney Heap Leach Pad	PM_{10}
2.004	Hauling of Ore - North Pit to BMM 2/3 Heap Leach Pad- ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
2.005	Hauling of Ore - Top/Sage Pit to BMM 2/3 Heap Leach Pad- ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
2.006	Hauling of Ore- Top/ Sage Pit to Mooney Heap Leach Pad- ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx

Emission Unit Group 3: Waste Handling		
3.001	Hauling of Waste to Sage Flat RDA	PM_{10}
3.002	Hauling of Waste to East Sage RDA	PM_{10}
3.003	Hauling of Waste to South Water Canyon RDA	PM_{10}
3.004	Hauling of Waste to North 1RDA	PM_{10}
3.005	Hauling of Waste to North 2 RDA	PM_{10}
3.006	Hauling of Waste to North 5 RDA	PM_{10}
3.007	Hauling of Waste to Sage Flat RDA - ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
3.008	Hauling of Waste to East Sage RDA ***-Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
3.009	Hauling of Waste to South Water Canyon RDA - ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
3.010	Hauling of Waste to North 1RDA - ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
3.011	Hauling of Waste to North 2 RDA - ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
3.012	Hauling of Waste to North 5 RDA - ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
3.013	Wind Erosion- RDAs	
3.014	Waste Unloading	PM_{10}
3.015	Waste Dozing	PM_{10}
3.016	Waste Dozing - ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
Emission Unit Group 4: Heap Leaching		
4.001	Unloading Ore - BMM 2/3 Leach Pad	PM_{10}
4.002	Unloading Ore - Mooney Leach Pad	PM_{10}
4.003	Ore Dozing - BMM 2/3 Leach Pad	PM_{10}
4.004	Ore Dozing - Mooney Leach Pad	PM_{10}
4.005	Ore Dozing (BMM 2/3 Leach Pad)- ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
4.006	Ore Dozing (Mooney Leach Pad)- ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
4.007	Wind Erosion - BMM 2/3 Leach Pad	PM_{10}
4.008	Wind Erosion - Mooney Leach Pad	PM_{10}
Emission Unit Group 5: Refinery		
5.001	Carbon Reactivation Kiln (North)- Carbon throughput	PM_{10}
5.002	Carbon Reactivation Kiln (Mooney)- Carbon throughput	PM_{10}
5.003	Mercury Retort (North)- Throughput	Hg
5.004	Mercury Retort (Mooney)- Throughput	Hg
5.005	Bullion Furnance (North)- Throughput	PM_{10}
5.006	Bullion Furnance (North)- Combustion 0.85MMBtu	CO, PM_{10}, VOCs, SO_2, NOx
5.007	Bullion Furnance (Mooney)- Throughput	PM_{10}
5.008	Bullion Furnance (Mooney)- Combustion 0.85MMBtu	CO, PM_{10}, VOCs, SO_2, NOx

Emission Unit Group 6: Storage Tanks (Diesel, Propane, Gasoline, Ethylene Glycol)		
6.001	Diesel Fuel Tank 1- 5140 Gal	VOCs
6.002	Diesel Fuel Tank 2- 2500 Gal	VOCs
6.003	Diesel Fuel Tank 3- 5240 Gal	VOCs
6.004	Diesel Fuel Tank 4- 1300 Gal	VOCs
6.005	Gasoline Tank- 2900 Gal	VOCs
6.006	Methanol Tank- 4940 Gal	VOCs
6.007	Waste Antifreeze Tank- 1500 Gal	VOCs
Emission Unit Group 7: Standby Generators		
7.001	#888-810 HP Generator 1(BMM process facility)	CO, PM_{10}, VOCs, SO_2, NOx
7.002	#888-810 HPGenerator 2 (Mooney process facility)	CO, PM_{10}, VOCs, SO_2, NOx
7.003	Generator 3 (Admin building)	CO, PM_{10}, VOCs, SO_2, NOx
7.004	Generator 4 (truck shop)	CO, PM_{10}, VOCs, SO_2, NOx
7.005	Generator 5 (truck shop)	CO, PM_{10}, VOCs, SO_2, NOx
Emission Unit Group 8: Portable Crushing System		
8.001	Loader (Crusher) - ***Combustion***	CO, PM_{10}, VOCs, SO_2, NOx
8.002	Loader Transfer to Grizzly Feeder	PM_{10}
8.003	Grizzly Feeder transfer to Jaw Crusher	PM_{10}
8.004	Jaw Crusher	PM_{10}
8.005	Jaw Crusher transfer to Underjaw Conveyor	PM_{10}
8.006	Underjaw conveyor transfer to Primary Screen Feed Conveyor	PM_{10}
8.007	Primary Screen Feed Conveyor transfer to Primary Screen	PM_{10}
8.008	Primary Screen	PM_{10}
8.009	Primary Screen transfer to Under Screen Belt #1	PM_{10}
8.010	Primary Screen transfer to Stowe Cross Belt #1	PM_{10}
8.011	Under Screen Belt #1 transfer to Transfer Conv #1	PM_{10}
8.012	Transfer Conveyor #1 transfer to Reject Sand Stacker	PM_{10}
8.013	Reject Sand Stacker transfer to Reject Stockpile	PM_{10}
8.014	Stowe Cross Belt #1 transfer to Finish Screen Feed Belt	PM_{10}
8.015	Return Belt transfer to Finish Screen Feed Belt	PM_{10}
8.016	Finish Screen Feed Belt transfer to Screen #2	PM_{10}
8.017	Finish Screen #2	PM_{10}
8.018	Screen #2 transfer to Under Screen Belt #2	PM_{10}
8.019	Screen #2 transfer to Stowe Cross Belt #1	PM_{10}
8.020	Stowe Cross Belt #1 transfer to Cone Feed Conveyor	PM_{10}
8.021	Cone Feed Conveyor transfer to Cedar Rapids Cone	PM_{10}
8.022	Cedar Rapids Cone	PM_{10}
8.023	Cedar Rapids Cone transfer to Cone Return Belt	PM_{10}
8.024	UnderScreen Belt #2 transfer to Type II Transfer Belt	PM_{10}
8.025	Type II Transfer Belt transfer to Product Stacker	PM_{10}
8.026	Product Stacker transfer to Finish Stockpile	PM_{10}
8.027	Wind Erosion- Finish Stockpile	PM_{10}

Emission Unit Group 9: Other Sources		
9.001	Waste oil heater (250,000Btu)	CO, PM_{10}, VOCs, SO_2, NOx
9.002	Heap leach lime silo loading	PM_{10}
9.003	Heap leach lime silo discharge to lime conveyor	PM_{10}
9.004	Heap leach lime conveyor transfer to dosing hopper	PM_{10}
9.005	Dosing Hopper transfer to truck	PM_{10}
9.006	Propane Refinery Boiler (2.5 million Btu)	CO, PM_{10}, VOCs, SO_2, NOx
9.007	Light Plant #1	CO, PM_{10}, VOCs, SO_2, NOx
9.008	Light Plant #2	CO, PM_{10}, VOCs, SO_2, NOx
9.009	Light Plant #3	CO, PM_{10}, VOCs, SO_2, NOx
9.010	Light Plant #4	CO, PM_{10}, VOCs, SO_2, NOx
9.011	Light Plant #5	CO, PM_{10}, VOCs, SO_2, NOx
9.012	Light Plant #6	CO, PM_{10}, VOCs, SO_2, NOx
9.013	Light Plant #7	CO, PM_{10}, VOCs, SO_2, NOx
9.014	Light Plant #8	CO, PM_{10}, VOCs, SO_2, NOx
9.015	Light Plant #9	CO, PM_{10}, VOCs, SO_2, NOx
9.016	Light Plant #10	CO, PM_{10}, VOCs, SO_2, NOx
9.017	Light Plant #11	CO, PM_{10}, VOCs, SO_2, NOx
9.018	Light Plant #12	CO, PM_{10}, VOCs, SO_2, NOx

APPENDIX B

24-Hour Emission Inventory for the Proposed Action

Barrick Gold U.S., Inc- Bald Mountain Mine Amendment to PoO

North Operations Area: Bald Mountain/ Mooney Basin

Air Pollutant Emission Inventory - Daily (24-Hr) Operation

Project Information

	General Mine Data	Value	Units	Source
	Material moisture content (M) - Ore	4.0	%	BMM
	Material moisture content (M) - Waste Rock	3.5	%	BMM
	Material moisture content (M) - Lime	3.0	%	BMM
	Surface material moisture content (M) - Roads	10.0	%	Enviroscientists Estimate
	Material silt content (s) - Ore	4.0	%	BMM
	Material silt content (s) - Waste Rock	4.0	%	BMM
	Material silt content (s) - Lime	5.0	%	BMM
	Silt content of road surface material (s) - Project Roads	7.0	%	BMM
	Vehicle Speed in Pits, Dumps, and Leach Areas	8	mph	BMM
	Average Speed of Haul Trucks	12	mph	BMM
	Sulfur Content of Gas Burned (S) - LPG	1.0	gr/100 ft^3 (gas vapor)	Enviroscientists Estimate
	North Pits Mine Data			
	Mined Material - North Pits	95,000	tons/day	
	Mined Material - North Pits	95,000	tons/time	Calc - Material Mined * Modeling Period/hours/day
	Waste to Ore Ratio	5	1	BMM
	Blast holes drilled	175	day	BMM
	Mined Ore	19,000	tons/time	Calc. - Percentage Ore * Material Mined
	Percentage Ore	20.0%		BMM
	Mined Waste	76,000	tons/time	Calc. - Percentage Waste * Material Mined
	Percentage Waste	80.0%		BMM
	Average Ore per Blast	18,000	tons	BMM
	Average Waste per Blast	75,000	tons	BMM
	Ore Haul Truck Load Size	240	tons/load	BMM
	Loads of Ore/Unit Time	79.17	loads/time	Calc. - Mined Ore / tons/load
	Waste Rock Haul Truck Load Size	240	tons/load	BMM
	Loads of Waste Rock/Unit Time	316.67	loads/time	Calc. - Mined Waste / tons/load
	Percentage of North Pits Ore to BMM 2/3 Leach Pad	100.00	%	BMM
	Percentage of North Pits Ore to Mooney Leach Pad	80.00	%	BMM
	Size of North 1RDA	808	acres	Enviroscientists Estimate
	Size of North 2 RDA	90	acres	Enviroscientists Estimate
	Size of North 5 RDA	141	acres	Enviroscientists Estimate
	Active Portion, North 1 RDA	35	acres	BMM
	Active Portion, North 2 RDA	10	acres	BMM
	Active Portion, North 3 RDA	10	acres	BMM
	Active Portion, North 4 RDA	5	acres	BMM
	Active Portion, North 5 RDA	10	acres	BMM
	Maximum Size of Non-reclaimed Surface Area of RDAs	220	acres	BMM
	Size of BMM 2/3 Heap Leach Facility	350	acres	BMM
	Size of Mooney Heap Leach Facility	410		BMM
	Heap Leach Facilities - Max. Acres Under Leach	10	acres	BMM
	Heap Leach Facilities - Max. Acres Fresh Ore	15	acres	BMM
	Average Usage of Ammonium Nitrate	40,000	lbs / day	BMM
	Average Usage of Ammonium Nitrate	40,000	lbs / time	Calculated
	North Pits Operational Hours	355	days/yr	BMM
	North Pits Operational Hours	18	hrs/day	BMM

	Top/ Sage Mine Data			
	Mined Material - Top/ Sage	125,000	tons/day	BMM
	Mined Material - Top/Sage	125,000	tons/time	Calc - Material Mined * Modeling Period/hours/day
	Waste to Ore Ratio	7	1	BMM
	Blast holes drilled	230	day	BMM
	Mined Ore	18,750	tons/time	Calc. - Percentage Ore * Material Mined
	Percentage Ore	15.0%		BMM
	Mined Waste	106,250	tons/time	Calc. - Percentage Waste * Material Mined
	Percentage Waste	85.0%		BMM
	Average Ore per Blast	10,000	tons	BMM
	Average Waste per Blast	107,000	tons	BMM
	Ore Haul Truck Load Size	240	tons/load	BMM
	Loads of Ore/Unit Time	78	loads/time	Calc. - Mined Ore / tons/load
	Waste Rock Haul Truck Load Size	240	tons/load	BMM
	Loads of Waste Rock/Unit Time	443	loads/time	Calc. - Mined Waste / tons/load
	Percentage of Top/Sage Ore to BMM 2/3 leach pad	20	%	BMM
	Percentage of Top/Sage Ore to Mooney leach pad	80	%	BMM
	Size of South Water Canyon RDA	63	acres	Enviroscientists Estimate
	Size of East Sage RDA	839	acres	Enviroscientists Estimate
	Size of Sage RDA	259	acres	Enviroscientists Estimate
	Active Portion, South Water Canyon RDA	25	acres	BMM
	Actvie Portion, East Sage RDA	60	acres	BMM
	Active Portion, Sage RDA	25	acres	BMM
	Maximum Size of Non-reclaimed Surface Area of RDAs	290	acres	BMM
	Size of BMM 2/3 Heap Leach Facility	350	acres	BMM
	Size of Mooney Heap Leach Facility	410		BMM
	Heap Leach Facilities - Max. Acres Under Leach	12	acres	BMM
	Heap Leach Facilities - Max. Acres Fresh Ore	15	acres	BMM
	Average Usage of Ammonium Nitrate	40,000	lbs / day	BMM
	Average Usage of Ammonium Nitrate	33,333	lbs / time	Calculated
	Top/ Sage Operational Hours	355	days/yr	BMM
	Top/ Sage Operational Hours	20	hrs/day	BMM
General Information				
	Factor	**Value**	**Units**	**Source**
	Mean wind speed (U) inside pit	4.13	MPH	Calc. from Met Data (1/2 of surface value)
	Mean wind speed (U)	8.25	MPH	Calc. from Elko 2005 Met Data
	% of time Avg. windspeed greater than 5.4 m/s (f)	9.85	%	Calc. from Elko Met Data, 2005 hourly averages
	Number of days per year with precipitation >0.01 inches	62.00	Days/year	Calc. from Elko 2005 Met Data
	Sulfur Content of fuel Burned (S) - Diesel	0.05	%	EPA Limits S content to 500 ppm starting (6/2007)
	Diesel Fuel Heating Value	0.133936	mmBTU/gal	AP-42
	Fuel Oil No. 2 Heating Value	0.140000	mmBTU/gal	AP-42
	Propane Heating Value	0.090500	mmBTU/gal	AP-42
	Days/Unit Time	1	days/time	BMM
	Hours/Unit Time	24	hours/time	BMM

	Placer Dome U.S. Bald Mountain Mine Amendment to PoO			
	North Operations Area: Bald Mountain/Mooney Basin			
	Air Pollutant Emission Inventory - Daily (24-Hr) Operation			
Emission Unit Specific Information				
	Factor	**Value**	**Units**	**Source**
	Emission Unit Group 1: In-Pit Handling			
1.001	***Drilling - Ore***			
	Total Average Number of Holes Drilled per time	175	holes/time	BMM
	Percentage Ore in Blasted Material	20	%	Project Information
	Holes Drilled/Unit Time	35	holes/time	Calc. - holes/time * Percentage Ore
	Emission Control Factor (ECF)	0%	Uncontrolled	
1.002	***Drilling - Waste***			
	Total Average Number of Holes Drilled per Day	175	holes/time	BMM
	Percentage Waste in Blasted Material	80	%	Project Information
	Holes Drilled/Unit Time	140	holes/time	Calc. - holes/time * Percentage Waste
	Emission Control Factor (ECF)	0%	Uncontrolled	
1.003	***Ammonium Nitrate Prill Silo Loading***			
	Tons/Delivery	20	tons/delivery	BMM
	Deliveries/Unit Time	1	deliveries/time	
	Tons/Unit Time	20.0	tons/time	Calc. - tons/delivery * delivery/time
	Emission Control Factor (ECF)	0%	Uncontrolled	
1.004	***Ammonium Nitrate Prill Silo Unloading***			
	Pounds Used/Hole	229	lbs/hole	Calc. Ammonium Nitrate used/holes drilled
	Tons Used/Unit Time	20.0	tons/time	Calc. - holes drilled per day * lbs/hole / 2,000
	Emission Control Factor (ECF)	0%	Uncontrolled	
1.005	***Blasting - Ore***			
	Horizontal Area of Blast (A)	90,000	sq.ft.	BMM
	Drilled Holes/Blast	225	holes/blast	BMM
	Blasts/Unit Time	0.20	blasts/time	Calc. - Fraction of Ore Material from Blast
				(from Project Information)
	Emission Control Factor (ECF)	0%	Uncontrolled	
1.006	***Blasting -Waste***			
	Horizontal Area of Blast (A)	140,000	sq.ft.	BMM
	Drilled Holes/Blast	225	holes/blast	BMM
	Blasts/Unit Time	0.80	blasts/time	Calc. - Fraction of Waste Material from Blast
				(from Project Information)
	Emission Control Factor (ECF)	0%	Uncontrolled	

1.007	***Explosive Detonation - Ore Blasting***			
	Ammonium Nitrate Used Per Hole (Primary Explosive)	229	lbs/hole	Calc. Ammonium Nitrate used/holes drilled
	PETN Used Per Hole (Booster)	1	lbs/hole	BMM
	Drilled Holes/Blast	225	holes/blast	BMM
	Blasts/Unit Time	1.00	blasts/time	Enviroscientists Assumption
	Percentage Ore Obtained from Blast	19	%	Project Information
	Ammonium Nitrate Used Per Unit Time	4.98	tons/time (ANFO)	Calc. - [ANFO (lbs/hole)*(holes/blast)
				(blasts/time)(Percentage Ore)]/2000
	PETN Used Per Unit Time	0.02	tons/time (PETN)	Calc. - [PETN (lbs/hole)*(holes/blast)
				(blasts/time)(Percentage Ore)]/2000
	Emission Control Factor (ECF)	0%	Uncontrolled	
1.008	***Explosive Detonation - Waste Blasting***			
	Ammonium Nitrate Used Per Hole (Primary Explosive)	229	lbs/hole	Calc. Ammonium Nitrate used/holes drilled
	PETN Used Per Hole (Booster)	2	lbs/hole	
	Drilled Holes/Blast	225	holes/blast	
	Blasts/Unit Time	1.00	blasts/time	Enviroscientists Assumption
	Percentage Waste Obtained from Blast	81	%	Project Information
	Ammonium Nitrate Used Per Unit Time	20.74	tons/time (ANFO)	Calc. - [ANFO (lbs/hole)*(holes/blast)
				(blasts/time)(Percentage Waste)]/2000
	PETN Used Per Unit Time	0.18	tons/time (PETN)	Calc. - [PETN (lbs/hole)*(holes/blast)
				(blasts/time)(Percentage Waste)]/2000
	Emission Control Factor (ECF)	0%	Uncontrolled	
1.009	***Loading - Ore***			
	Tons Ore/Unit Time	19,000	tons/time	Project Information
	Emission Control Factor (ECF)	0%	Uncontrolled	
1.010	***Loading - Waste***			
	Tons Waste Rock/Unit Time	76,000	tons/time	Project Information
	Emission Control Factor (ECF)	0%	Uncontrolled	
1.011	***Loaders (Pit) - Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	2	hours	BMM
	Individual Unit Hours Used/Unit Time	2.0	hrs/time	Calc. - % availability * %utilization * hours/time
	No. Units	2	Unit	BMM
	Average Horsepower	1,500	hp	BMM
	Emission Control Factor (ECF)	0%	Uncontrolled	
1.012	***Hydraulic Shovel - Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	17	hours	BMM
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Average Horsepower	2,600	hp	BMM
	No. Units	2	Unit	BMM
	Emission Control Factor (ECF)	0%	Uncontrolled	

1.013	***Rotary Drills - Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	14	hours	BMM
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Average Horsepower	650	hp	BMM
	No. Units	4	Unit	BMM
	Emission Control Factor (ECF)	0%	Uncontrolled	
1.014	***Motor Grader - Combustion***			
	Availability of Individual Units	100%		
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	10	hours	BMM
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Average Horsepower	275	hp	BMM
	No. Units	3	Unit	BMM
	Emission Control Factor (ECF)	0%	Uncontrolled	
1.015	***Blasting Trucks - Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	5	hours	BMM
	Individual Unit Hours Used/Unit Time	4.0	hrs/time	Calc. - % availability * %utilization * hours/time
	Average Horsepower	200	hp	BMM
	No. Units	2	Unit	BMM
	Emission Control Factor (ECF)	0%	Uncontrolled	
1.016	***Excavator- Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	8	hours	BMM
	Individual Unit Hours Used/Unit Time	4.0	hrs/time	Calc. - % availability * %utilization * hours/time
	Average Horsepower	270	hp	BMM
	No. Units	1	Unit	BMM
	Emission Control Factor (ECF)	0%	Uncontrolled	
1.017	***Water Trucks - Combustion***			
	Availability of Individual Units	100%		
	Utilization of Individual Units	80%		
	Maximum Daily Hours of Operation	8	hours	
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Average Horsepower	1,000	hp	
	No. Units	3	Unit	
	Emission Control Factor (ECF)	0%	Uncontrolled	

1.018	***Water Trucks - Fugitive Emissions***			
	Vehicle Speed (S) - Watering	5	MPH	Enviroscientists Assumption
	Vehicle Speed (S) - Not Watering	12	MPH	
	Total Miles of Haul Roads	30.55	miles	Enviroscientists Calculation
	Maximum Daily Hours of Operation	8	hours	
	Loaded Vehicle Weight	184	tons	CGM - Weighted Average
	Empty Vehicle Weight	92	tons	CGM - Weighted Average
	Average Vehichle Weight	138	tons	Calc - Average of loaded and unloaded truck
	Mean Number of Wheels (w)	6	wheels	
	Hours to Travel All Haul Roads	8.66	hours	Calc. - (Miles of Haul Roads/Watering Vehicle
				Speed)+ (Miles of Haul Roads/Not Watering
				Vehicle Speed)
	Vehicle Miles Travelled Per Vehicle Per Day	28	miles	Calc. - (hours/day / hours to travel all haul roads)
				*Total Miles of Haul Road
	Number of Units	3		
	Total Vehicle Miles Travelled Per Day	85	miles	Calc. - (Vehicle Miles Travelled Per Vehicle
	Total Time travel for all vehicles	24		Per Day)*Number of Units
	Emission Control Factor (ECF)	50%	Watering	
Emission Unit Group 2: Ore Handling				
2.001	***Hauling of Ore - North Pit to BMM 2/3 Heap Leach Pad***			
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Loaded Vehicle Weight	460	tons	BMM
	Empty Vehicle Weight	220	tons	BMM
	Average Vehichle Weight	340	tons	Calc - Average of loaded and unloaded truck
	Mean Number of Wheels (w)	6	wheels	
	Vehicle Miles Traveled/Load	10.97	VMT/load	Enviroscientists Calculation
	Daily Average Material to Leach Pad	19000	tons/time	Calc. - %Ore to BMM Leach * tons ore mined/day
	Average Weight per Load	240	tons/load	
	Loads/Unit Time	79	loads/time	Calc. - tons/time / loads/time
	Vehicle Miles Traveled/Unit Time	868.09	VMT/time	Calc. - VMT/load * loads/time
	Emission Control Factor (ECF)	50%	Watering	
2.002	***Hauling of Ore - Top/Sage Pit to BMM 2/3 Heap Leach Pad***			
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Loaded Vehicle Weight	460	tons	BMM
	Empty Vehicle Weight	220	tons	BMM
	Average Vehichle Weight	340	tons	Calc - Average of loaded and unloaded truck
	Mean Number of Wheels (w)	6	wheels	BMM
	Vehicle Miles Traveled/Load	28.88	VMT/load	Enviroscientists Calculation
	Daily Average Material to Leach Pad	3750	tons/time	Calc. - %Ore to BMM Leach * tons ore mined/day
	Average Weight per Load	240	tons/load	
	Loads/Unit Time	16	loads/time	Calc. - tons/time / loads/time
	Vehicle Miles Traveled/Unit Time	451.17	VMT/time	Calc. - VMT/load * loads/time
	Emission Control Factor (ECF)	50%	Watering	
2.003	***Hauling of Ore- Top/ Sage Pit to Mooney Heap Leach Pad***			
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Loaded Vehicle Weight	460	tons	BMM
	Empty Vehicle Weight	220	tons	BMM
	Average Vehichle Weight	340	tons	Calc - Average of loaded and unloaded truck
	Mean Number of Wheels (w)	6	wheels	BMM
	Vehicle Miles Traveled/Load	22.86	VMT/load	Enviroscientists Calculation
	Daily Average Material to Leach Pad	15000	tons/time	Calc. - %Ore to Mooney Leach * tons ore mined/day
	Average Weight per Load	240	tons/load	
	Loads/Unit Time	63	loads/time	Calc. - tons/time / loads/time
	Vehicle Miles Traveled/Unit Time	1428.46	VMT/time	Calc. - VMT/load * loads/time
	Emission Control Factor (ECF)	50%	Watering	

2.004	***Hauling of Ore - North Pit to BMM 2/3 Heap Leach Pad- Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	20	hours	BMM
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Vehicle Miles Traveled/Load	10.97	VMT/load	Enviroscientists Calculation
	Average Horsepower	3,500	hp	BMM
	Loads/Unit Time	79.17	loads/time	
	Average Material to BMM 2/3 Leach	19000	tons/time	
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	
	Time to Move Ore	72.3	hours	Calc. - VMT * Number of Trips / Vehicle Speed
	Emission Control Factor (ECF)	0%	Uncontrolled	
2.005	***Hauling of Ore - Top/Sage Pit to BMM 2/3 Heap Leach Pad- Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	20	hours	BMM
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Vehicle Miles Traveled/Load	28.88	VMT/load	Enviroscientists Calculation
	Average Horsepower	3,500	hp	BMM
	Loads/Unit Time	15.63	loads/time	
	Average Material to BMM 2/3 Leach	3750	tons/time	
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	
	Time to Move Ore	37.6	hours	Calc. - VMT * Number of Trips / Vehicle Speed
	Emission Control Factor (ECF)	0%	Uncontrolled	
2.006	**Hauling of Ore- Top/ Sage Pit to Mooney Heap Leach Pad- Combustion**			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	20	hours	BMM
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Vehicle Miles Traveled/Load	22.86	VMT/load	Enviroscientists Calculation
	Average Horsepower	3,500	hp	BMM
	Loads/Unit Time	62.50	loads/time	
	Average Material to Mooney Leach	15000	tons/time	
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	
	Time to Move Ore	119.0	hours	Calc. - VMT * Number of Trips / Vehicle Speed
	Emission Control Factor (ECF)	0%	Uncontrolled	
Emission Unit Group 3: Waste Handling				
3.001	***Hauling of Waste to Sage Flat RDA***			
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Loaded Vehicle Weight	460	tons	
	Empty Vehicle Weight	220	tons	
	Average Vehicle Weight	340	tons	Calc - Average of loaded and unloaded truck
	Mean Number of Wheels (w)	6	wheels	
	Vehicle Miles Traveled/Load	1.60	VMT/load	Enviroscientists Calculation
	Average Material to RDA	106,250	tons/time	Project Information
	Average Weight per load	240	tons/load	
	Loads/Unit Time	443	loads/time	Calc. - tons/time / loads/time
	Vehicle Miles Traveled/Unit Time	708.33	VMT/time	Calc. - VMT/load * loads/time
	Emission Control Factor (ECF)	50%	Watering	

3.002	***Hauling of Waste to East Sage RDA***			
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Loaded Vehicle Weight	460	tons	
	Empty Vehicle Weight	220	tons	
	Average Vehicle Weight	340	tons	Calc - Average of loaded and unloaded truck
	Mean Number of Wheels (w)	6	wheels	
	Vehicle Miles Traveled/Load	1.60	VMT/load	Enviroscientists Calculation
	Average Material to RDA	106,250	tons/time	Project Information
	Average Weight per load	240	tons/load	
	Loads/Unit Time	443	loads/time	Calc. - tons/time / loads/time
	Vehicle Miles Traveled/Unit Time	708.33	VMT/time	Calc. - VMT/load * loads/time
	Emission Control Factor (ECF)	50%	Watering	
3.003	***Hauling of Waste to South Water Canyon RDA***			
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Loaded Vehicle Weight	460	tons	
	Empty Vehicle Weight	220	tons	
	Average Vehicle Weight	340	tons	Calc - Average of loaded and unloaded truck
	Mean Number of Wheels (w)	6	wheels	
	Vehicle Miles Traveled/Load	1.60	VMT/load	Enviroscientists Calculation
	Average Material to RDA	106,250	tons/time	Project Information
	Average Weight per load	240	tons/load	
	Loads/Unit Time	443	loads/time	Calc. - tons/time / loads/time
	Vehicle Miles Traveled/Unit Time	708.33	VMT/time	Calc. - VMT/load * loads/time
	Emission Control Factor (ECF)	50%	Watering	
3.004	***Hauling of Waste to North 1RDA***			
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Loaded Vehicle Weight	460	tons	
	Empty Vehicle Weight	220	tons	
	Average Vehicle Weight	340	tons	Calc - Average of loaded and unloaded truck
	Mean Number of Wheels (w)	6	wheels	
	Vehicle Miles Traveled/Load	1.00	VMT/load	Enviroscientists Calculation
	Average Material to RDA	76,000	tons/time	Project Information
	Average Weight per load	240	tons/load	
	Loads/Unit Time	317	loads/time	Calc. - tons/time / loads/time
	Vehicle Miles Traveled/Unit Time	316.67	VMT/time	Calc. - VMT/load * loads/time
	Emission Control Factor (ECF)	50%	Watering	
3.005	***Hauling of Waste to North 2 RDA***			
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Loaded Vehicle Weight	460	tons	
	Empty Vehicle Weight	220	tons	
	Average Vehicle Weight	340	tons	Calc - Average of loaded and unloaded truck
	Mean Number of Wheels (w)	6	wheels	
	Vehicle Miles Traveled/Load	1.00	VMT/load	Enviroscientists Calculation
	Average Material to RDA	76,000	tons/time	Project Information
	Average Weight per load	240	tons/load	
	Loads/Unit Time	317	loads/time	Calc. - tons/time / loads/time
	Vehicle Miles Traveled/Unit Time	316.67	VMT/time	Calc. - VMT/load * loads/time
	Emission Control Factor (ECF)	50%	Watering	

3.006	***Hauling of Waste to North 5 RDA***			
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Loaded Vehicle Weight	460	tons	
	Empty Vehicle Weight	220	tons	
	Average Vehicle Weight	340	tons	Calc - Average of loaded and unloaded truck
	Mean Number of Wheels (w)	6	wheels	
	Vehicle Miles Traveled/Load	1.00	VMT/load	Enviroscientists Calculation
	Average Material to RDA	76,000	tons/time	Project Information
	Average Weight per load	240	tons/load	
	Loads/Unit Time	317	loads/time	Calc. - tons/time / loads/time
	Vehicle Miles Traveled/Unit Time	316.67	VMT/time	Calc. - VMT/load * loads/time
	Emission Control Factor (ECF)	50%	Watering	
3.007	***Hauling of Waste to Sage Flat RDA -Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	20	hours	BMM
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Vehicle Miles Traveled/Load	1.60	VMT/load	Enviroscientists Calculation
	Average Horsepower	3,500	hp	BMM
	Loads/Unit Time	443	loads/time	
	Average Material to RDA	76,000	tons/time	
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Time to Move Waste Rock	59.0	hours	Calc. - VMT * Number of Trips / Vehicle Speed
	Emission Control Factor (ECF)	0%	Uncontrolled	
3.008	***Hauling of Waste to East Sage RDA -Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	20	hours	BMM
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Vehicle Miles Traveled/Load	1.60	VMT/load	Enviroscientists Calculation
	Average Horsepower	3,500	hp	BMM
	Loads/Unit Time	443	loads/time	
	Average Material to RDA	106,250	tons/time	
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Time to Move Waste Rock	59.0	hours	Calc. - VMT * Number of Trips / Vehicle Speed
	Emission Control Factor (ECF)	0%	Uncontrolled	
3.009	***Hauling of Waste to South Water Canyon RDA -Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	20	hours	BMM
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Vehicle Miles Traveled/Load	1.60	VMT/load	Enviroscientists Calculation
	Average Horsepower	3,500	hp	BMM
	Loads/Unit Time	443	loads/time	
	Average Material to RDA	106,250	tons/time	
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Time to Move Waste Rock	59.0	hours	Calc. - VMT * Number of Trips / Vehicle Speed
	Emission Control Factor (ECF)	0%	Uncontrolled	

3.010	***Hauling of Waste to North 1RDA -Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	20	hours	BMM
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Vehicle Miles Traveled/Load	1.00	VMT/load	Enviroscientists Calculation
	Average Horsepower	3,500	hp	BMM
	Loads/Unit Time	317	loads/time	
	Average Material to RDA	76,000	tons/time	
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Time to Move Waste Rock	26.4	hours	Calc. - VMT * Number of Trips / Vehicle Speed
	Emission Control Factor (ECF)	0%	Uncontrolled	
3.011	***Hauling of Waste to North 2 RDA -Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	20	hours	BMM
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Vehicle Miles Traveled/Load	1	VMT/load	Enviroscientists Calculation
	Average Horsepower	3,500	hp	BMM
	Loads/Unit Time	317	loads/time	
	Average Material to RDA	76,000	tons/time	
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Time to Move Waste Rock	26	hours	Calc. - VMT * Number of Trips / Vehicle Speed
	Emission Control Factor (ECF)	0%	Uncontrolled	
3.012	***Hauling of Waste to North 5 RDA -Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	20	hours	BMM
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Vehicle Miles Traveled/Load	1	VMT/load	Enviroscientists Calculation
	Average Horsepower	3,500	hp	BMM
	Loads/Unit Time	317	loads/time	
	Average Material to RDA	76,000	tons/time	
	Average Vehicle Speed (S) - Loaded and Empty	12	MPH	Project Information
	Time to Move Waste Rock	26	hours	Calc. - VMT * Number of Trips / Vehicle Speed
	Emission Control Factor (ECF)	0%	Uncontrolled	
3.013	***Wind Erosion- RDAs***			
	Size of Active RDAs	290	acres	Project Information
	Emission Control Factor (ECF)	0%	Uncontrolled	
3.014	***Waste Unloading***			
	Tons Waste Rock/Unit Time	106,250	tons/time	Project Information
	Emission Control Factor (ECF)	0%	Uncontrolled	
3.015	***Waste Dozing***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	10	hours	BMM
	Hours Dozing/Unit Time	10	hours/time	Calc. - % availability * %utilization * hours/time
	No. Units	5	Unit	BMM
	Emission Control Factor (ECF)	0%	Uncontrolled	

3.016	***Waste Dozing - Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	10	hours	BMM
	Hours Dozing/Unit Time	10	hrs/time	Calc. - % availability * %utilization * hours/time
	Average Horsepower	600	hp	BMM
	No. Units	5	Unit	BMM
	Emission Control Factor (ECF)	0%	Uncontrolled	
	Emission Unit Group 4: Heap Leaching			
4.001	***Unloading Ore - BMM 2/3 Leach Pad***			
	Tons Ore Unloaded/Unit Time	22,750	tons/time	Calc. - Ore Mined per Day @ Leach
	Emission Control Factor (ECF)	0%	Uncontrolled	
4.002	***Unloading Ore - Mooney Leach Pad***			
	Tons Ore Unloaded/Unit Time	30,200	tons/time	Calc. - Ore Mined per Day @ Leach
	Emission Control Factor (ECF)	0%	Uncontrolled	
4.003	***Ore Dozing - BMM 2/3 Leach Pad***			
	Hours Dozing/Unit Time	0.5	hours/time	BMM
	Emission Control Factor (ECF)	0%	Uncontrolled	
4.004	***Ore Dozing - Mooney Leach Pad***			
	Hours Dozing/Unit Time	0.5	hours/time	BMM
	Emission Control Factor (ECF)	0%	Uncontrolled	
4.005	***Ore Dozing (BMM 2/3 Leach Pad)- Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	10	hours	BMM
	Individual Unit Hours Used/Unit Time	8.0	hrs/time	Calc. - % availability * %utilization * hours/time
	Average Horsepower	600	hp	BMM
	No. Units	1	Unit	
	Emission Control Factor (ECF)	0%	Uncontrolled	
4.006	***Ore Dozing (Mooney Leach Pad)- Combustion***			
	Availability of Individual Units	100%		BMM
	Utilization of Individual Units	80%		BMM
	Maximum Daily Hours of Operation	10	hours	BMM
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Average Horsepower	600	hp	BMM
	No. Units	1	Unit	
	Emission Control Factor (ECF)	0%	Uncontrolled	
4.007	***Wind Erosion - BMM 2/3 Leach Pad***			
	Size of Leach Pad Under Leach	10	acres	
	Size of Leach Pad with Fresh Ore	15	acres	
	Emission Control Factor - Non-Leach (ECF)	0%	Uncontrolled	
	Emission Control Factor - Leach Area (ECF)	95%	Leachate	

4.008	***Wind Erosion - Mooney Leach Pad***			
	Size of Leach Pad Under Leach	12	acres	
	Size of Leach Pad with Fresh Ore	15	acres	
	Emission Control Factor - Non-Leach (ECF)	0%	Uncontrolled	
	Emission Control Factor - Leach Area (ECF)	95%	Leachate	
Emission Unit Group 5: Refinery				
5.001	***Carbon Reactivation Kiln (North)- Carbon throughput***			
	Hourly Throughput	0.1250	tons/hour	Air Quality Permit No. AP1041-1362
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1362
	Tons Processed / Unit Time	3.0	tons/time	Calc. - tons/hour * hours
	Emission Control Factor (ECF)	0%	Uncontrolled	
5.002	***Carbon Reactivation Kiln (Mooney)- Carbon throughput***			
	Hourly Throughput	0.1250	tons/hour	
	Hours of Operation / Unit Time	24	hours/time	
	Tons Processed / Unit Time	3.0	tons/time	Calc. - tons/hour * hours
	Emission Control Factor (ECF)	0%	Uncontrolled	
5.003	***Mercury Retort (North)- Throughput***			
	Hourly Throughput	0.2	tons/hour	Air Quality Permit No. AP1041-1362
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1362
	Tons Processed / Unit Time	4.8	tons/time	Calc. - tons/hour * hours
	Emission Control Factor (ECF)	0%	Uncontrolled	
5.004	***Mercury Retort (Mooney)- Throughput***			
	Hourly Throughput	0.2	tons/hour	
	Hours of Operation / Unit Time	24	hours/time	
	Tons Processed / Unit Time	4.8	tons/time	Calc. - tons/hour * hours
	Emission Control Factor (ECF)	0%	Uncontrolled	
5.005	***Bullion Furnance (North)- Throughput***			
	Hourly Throughput	0.05	tons/hour	Air Quality Permit No. AP1041-1362
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1362
	Tons Processed / Unit Time	1.2	tons/time	Calc. - tons/hour * hours
	Emission Control Factor (ECF)	99%	Baghouse	
5.006	***Bullion Furnance (North)- Combustion 0.85MMBtu***			
	Heat Input	0.85	mmBtu/hour	Air Quality Permit No. AP1041-1362
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1362
	Propane Heating Value	0.09	mmBtu/gal	Project Information
	Fuel Consumption / Hour	9.29	gal/hour	Air Quality Permit No. AP1041-1362
	Fuel Consumption / Unit Time	223	gal/time	Calc. - gal/hour * hours/time
	Emission Control Factor (ECF)	99%	Baghouse	
5.007	***Bullion Furnance (Mooney)- Throughput***			
	Hourly Throughput	0.05	tons/hour	
	Hours of Operation / Unit Time	24	hours/time	
	Tons Processed / Unit Time	1.2	tons/time	Calc. - tons/hour * hours
	Emission Control Factor (ECF)	99%	Baghouse	

5.008	***Bullion Furnance (Mooney)- Combustion 0.85MMBtu***			
	Heat Input	0.85	mmBtu/hour	
	Hours of Operation / Unit Time	24	hours/time	
	Propane Heating Value	0.09	mmBtu/gal	Project Information
	Fuel Consumption / Hour	9.29	gal/hour	
	Fuel Consumption / Unit Time	223	gal/time	Calc. - gal/hour * hours/time
	Emission Control Factor (ECF)	99%	Baghouse	
Emission Unit Group 7: Standby Generators				
7.001	***#888-810 HP Generator 1(BMM process facility)***			
	Engine Rating	810	HP	Air Quality Permit No. AP1041-1362
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1362
	Emission Control Factor (ECF)	0%	Uncontrolled	
7.002	***#888-810 HPGenerator 2 (Mooney process facility)***			
	Engine Rating	810	HP	Air Quality Permit No. AP1041-1362
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1362
	Emission Control Factor (ECF)	0%	Uncontrolled	
7.003	***Generator 3 (Admin building)***			
	Engine Rating	100	HP	Air Quality Permit No. AP1041-1362
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1362
	Emission Control Factor (ECF)	0%	Uncontrolled	
7.004	***Generator 4 (truck shop)***			
	Engine Rating	60	HP	Air Quality Permit No. AP1041-1362
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1362
	Emission Control Factor (ECF)	0%	Uncontrolled	
7.005	***Generator 5 (truck shop)***			
	Engine Rating	120	HP	Air Quality Permit No. AP1041-1362
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1362
	Emission Control Factor (ECF)	0%	Uncontrolled	
Emission Unit Group 8: Portable Crushing System				
8.001	***Loader (Crusher) - Combustion***			
	Availability of Individual Units	100%		
	Utilization of Individual Units	80%		
	Maximum Daily Hours of Operation	24	hours	
	Individual Unit Hours Used/Unit Time	19.2	hrs/time	Calc. - % availability * %utilization * hours/time
	Average Horsepower	800	hp	
	No. Units	1	Unit	
	Emission Control Factor (ECF)	0%	Uncontrolled	
8.002	***Loader Transfer to Grizzly Feeder***			
	Hourly Throughput	300	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	3000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	

8.003	***Grizzly Feeder transfer to Jaw Crusher***			
	Hourly Throughput	300	tons/hour	Enviroscientists Estimate
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	3000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227
8.004	***Jaw Crusher***			
	Hourly Throughput	300	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	3000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	75%	Water Sprays	Air Quality Permit No. AP1611-2227
8.005	***Jaw Crusher transfer to Underjaw Conveyor***			
	Hourly Throughput	300	tons/hour	Enviroscientists Estimate
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	3000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227
8.006	***Underjaw conveyor transfer to Primary Screen Feed Conveyor***			
	Hourly Throughput	300	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	3000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	75%	Water Sprays	Air Quality Permit No. AP1611-2227
8.007	***Primary Screen Feed Conveyor transfer to Primary Screen***			
	Hourly Throughput	300	tons/hour	Enviroscientists Estimate
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	3000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227
8.008	***Primary Screen***			
	Hourly Throughput	300	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	3,000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227
8.009	***Primary Screen transfer to Under Screen Belt #1***			
	Hourly Throughput	100	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	1,000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227
8.010	***Primary Screen transfer to Stowe Cross Belt #1***			
	Hourly Throughput	300	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	3,000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227
8.011	***Under Screen Belt #1 transfer to Transfer Conv #1***			
	Hourly Throughput	100	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	1,000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	75%	Water Sprays	Air Quality Permit No. AP1611-2227

8.012	***Transfer Conveyor #1 transfer to Reject Sand Stacker***			
	Hourly Throughput	100	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	1,000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	
8.013	***Reject Sand Stacker transfer to Reject Stockpile***			
	Hourly Throughput	100	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	1,000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227
8.014	***Stowe Cross Belt #1 transfer to Finish Screen Feed Belt***			
	Hourly Throughput	300	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	3,000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	75%	Water Sprays	Air Quality Permit No. AP1611-2227
8.015	***Return Belt transfer to Finish Screen Feed Belt***			
	Hourly Throughput	175	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	1,750	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	75%	Water Sprays	Air Quality Permit No. AP1611-2227
8.016	***Finish Screen Feed Belt transfer to Screen #2***			
	Hourly Throughput	475	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	4,750	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227
8.017	***Finish Screen #2***			
	Hourly Throughput	475	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	4,750	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	75%	Water Sprays	Air Quality Permit No. AP1611-2227
8.018	***Screen #2 transfer to Under Screen Belt #2***			
	Hourly Throughput	300	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	3,000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227
8.019	***Screen #2 transfer to Stowe Cross Belt #1***			
	Hourly Throughput	175	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	1,750	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227
8.020	***Stowe Cross Belt #1 transfer to Cone Feed Conveyor***			
	Hourly Throughput	175	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	1,750	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227

8.021	***Cone Feed Conveyor transfer to Cedar Rapids Cone***			
	Hourly Throughput	175	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	1,750	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227
8.022	***Cedar Rapids Cone***			
	Hourly Throughput	175	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	1,750	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	75%	Water Sprays	Air Quality Permit No. AP1611-2227
8.023	***Cedar Rapids Cone transfer to Cone Return Belt***			
	Hourly Throughput	175	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	1,750	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227
8.024	***UnderScreen Belt #2 transfer to Type II Transfer Belt***			
	Hourly Throughput	300	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	3,000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	75%	Water Sprays	Air Quality Permit No. AP1611-2227
8.025	***Type II Transfer Belt transfer to Product Stacker***			
	Hourly Throughput	300	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	3,000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227
8.026	***Product Stacker transfer to Finish Stockpile***			
	Hourly Throughput	300	tons/hour	Air Quality Permit No. AP1611-2227
	Hours of Operation / Unit Time	10	hours/time	Air Quality Permit No. AP1611-2227
	Tons Processed / Unit Time	3,000	tons/time	Calc. - tons/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1611-2227
8.027	***Wind Erosion- Finish Stockpile***			
	Size of Ore Stockpile	2.0	acres	Enviroscientists Estimate
	Emission Control Factor (ECF)	0%	Uncontrolled	
	Emission Unit Group 9: Other Sources			
9.001	***Waste oil heater (250,000Btu)***			
	Heat Input	0.25	mmBtu/hour	Air Quality Permit No. AP1041-1362
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1362
	Propane Heating Value	0.09	mmBtu/gal	Project Information
	Fuel Consumption / Hour	2.8	gal/hour	
	Fuel Consumption / Unit Time	66	gal/time	Calc. - gal/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	
9.002	***Heap leach lime silo loading***			
	Hourly Throughput	50	tons/hour	Air Quality Permit No. AP1041-1336
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1336
	Tons Processed / Unit Time	1,200	tons/time	
	Emission Control Factor (ECF)	90%	Bin vent	Air Quality Permit No. AP1041-1336

9.003	***Heap leach lime silo discharge to lime conveyor***			
	Hourly Throughput	20	tons/hour	Air Quality Permit No. AP1041-1336
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1336
	Tons Processed / Unit Time	480	tons/time	
	Emission Control Factor (ECF)	50%	enclosure	Air Quality Permit No. AP1041-1336
9.004	***Heap leach lime conveyor transfer to dosing hopper***			
	Hourly Throughput	20	tons/hour	Air Quality Permit No. AP1041-1336
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1336
	Tons Processed / Unit Time	480	tons/time	
	Emission Control Factor (ECF)	50%	enclosure	Air Quality Permit No. AP1041-1336
9.005	***Dosing Hopper transfer to truck***			
	Hourly Throughput	20	tons/hour	Air Quality Permit No. AP1041-1336
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1336
	Tons Processed / Unit Time	480	tons/time	
	Emission Control Factor (ECF)	0%	Uncontrolled	Air Quality Permit No. AP1041-1336
9.006	***Propane Refinery Boiler (2.5 million Btu)***			
	Boiler Rating	2.50	mmBtu/hour	Air Quality Permit No. AP1041-1362
	Hours of Operation / Unit Time	24	hours/time	Air Quality Permit No. AP1041-1362
	Propane Heating Value	0.09	mmBtu/gal	Project Information
	Fuel Consumption / Hour	53.8	gal/hour	
	Fuel Consumption / Unit Time	1,291	gal/time	Calc. - gal/hour * hours/time
	Emission Control Factor (ECF)	0%	Uncontrolled	
9.007	***Light Plant #1***			
	Number of Units	1		
	Size of Light Plants	30	HP	
	Hours of Operation / Unit Time	12	hours/time	Enviroscientists Estimate
	Emission Control Factor (ECF)	0%	Uncontrolled	
9.008	***Light Plant #2***			
	Number of Units	1		
	Size of Light Plants	30	HP	
	Hours of Operation / Unit Time	12	hours/time	Enviroscientists Estimate
	Emission Control Factor (ECF)	0%	Uncontrolled	
9.009	***Light Plant #3***			
	Number of Units	1		
	Size of Light Plants	30	HP	
	Hours of Operation / Unit Time	12	hours/time	Enviroscientists Estimate
	Emission Control Factor (ECF)	0%	Uncontrolled	
9.010	***Light Plant #4***			
	Number of Units	1		
	Size of Light Plants	30	HP	
	Hours of Operation / Unit Time	12	hours/time	Enviroscientists Estimate
	Emission Control Factor (ECF)	0%	Uncontrolled	
9.011	***Light Plant #5***			
	Number of Units	1		
	Size of Light Plants	30	HP	
	Hours of Operation / Unit Time	12	hours/time	Enviroscientists Estimate
	Emission Control Factor (ECF)	0%	Uncontrolled	

9.012	***Light Plant #6***			
	Number of Units	1		
	Size of Light Plants	30	HP	
	Hours of Operation / Unit Time	12	hours/time	Enviroscientists Estimate
	Emission Control Factor (ECF)	0%	Uncontrolled	
9.013	***Light Plant #7***			
	Number of Units	1		
	Size of Light Plants	30	HP	
	Hours of Operation / Unit Time	12	hours/time	Enviroscientists Estimate
	Emission Control Factor (ECF)	0%	Uncontrolled	
9.014	***Light Plant #8***			
	Number of Units	1		
	Size of Light Plants	30	HP	
	Hours of Operation / Unit Time	12	hours/time	Enviroscientists Estimate
	Emission Control Factor (ECF)	0%	Uncontrolled	
9.015	***Light Plant #9***			
	Number of Units	1		
	Size of Light Plants	30	HP	
	Hours of Operation / Unit Time	12	hours/time	Enviroscientists Estimate
	Emission Control Factor (ECF)	0%	Uncontrolled	
9.016	***Light Plant #10***			
	Number of Units	1		
	Size of Light Plants	30	HP	
	Hours of Operation / Unit Time	12	hours/time	Enviroscientists Estimate
	Emission Control Factor (ECF)	0%	Uncontrolled	
9.017	***Light Plant #11***			
	Number of Units	1		
	Size of Light Plants	30	HP	
	Hours of Operation / Unit Time	12	hours/time	Enviroscientists Estimate
	Emission Control Factor (ECF)	0%	Uncontrolled	
9.018	***Light Plant #12***			
	Number of Units	1		
	Size of Light Plants	30	HP	
	Hours of Operation / Unit Time	12	hours/time	Enviroscientists Estimate
	Emission Control Factor (ECF)	0%	Uncontrolled	

APPENDIX C

AERMOD Model Input and Output Files, Digital Emission Inventories, and DEM Quadrangles

APPENDIX I

Visual Resource Information

View to the east from KOP 1, existing conditions.

View to the southwest from KOP 2, existing conditions.

Figure I-1

View to the southwest from KOP 3, existing conditions.

View to the southwest from KOP 4, existing conditions.

Figure I-2

View from KOP 2, existing conditions.

Simulated view of North Area RDA from KOP 2 during active mining.

Simulated view from KOP 2 after successful reclamation.

Figure I-3

View from KOP 3, existing conditions.

Simulated view of expanded East Sage RDA from KOP 3 during active mining.

Simulated view from KOP 3 after successful reclamation.

Figure I-4

View from KOP 4, existing conditions.

Simulated view of expanded Mooney Leach Pad from KOP 4 during active mining.

Simulated view from KOP 4 after successful reclamation.

Figure I-5

Visual Contrast Rating Worksheets

Visual Contrast Rating Worksheet

Section A. Project Information

Project Name	Bald Mountain Mine NOA – Proposed Action and Alternatives A and B	**KOP Location**
Key Observation Point	KOP 1, View to E During active mining	UTM Zone 11, NAD83
VRM Class	III and IV	E 0607680 N 4422822

Section B. Characteristic Landscape Description

	Land/Water	Vegetation	Structures
Form	Flat to rolling terrain	Indistinct, irregular	None
Line	Horizontal and diagonal	Complex	None
Color	Tan, gray-green, dark green	Gray-green, dark green	None
Texture	Coarse, rough	Smooth, gradational	None

Section C. Proposed Activity Description

	Land/Water	Vegetation	Structures
Form	Flat to rolling terrain	Indistinct, irregular	None
Line	Horizontal and diagonal	Complex	None
Color	Light tan	Gray-green, dark green	None
Texture	Coarse, rough	Smooth, gradational	None

Section D. Contrast Rating

	Land/Water	Vegetation	Structures
Form	3	2	4
Line	3	2	4
Color	2	2	4
Texture	2	2	4

Notes: Degree of Contrast: 1 = Strong; 2 = Moderate; 3 = Weak; 4 = None

Does project design meet visual resource management objectives? Yes. During active mining, elements of the Proposed Action such as RDAs and leach pads would create additional areas of contrast with surrounding undisturbed landforms and vegetation. This contrast would be moderate because of the existing disturbance that is visible and the distance of the disturbance from the observer. VRM Class III and IV allow for moderate contrast.

Additional mitigating measures recommended. None.

Evaluator: R. Duncan, JBR Environmental Consultants
Date: July 2007, revised February 2009

Visual Contrast Rating Worksheet

Section A. Project Information

Project Name	Bald Mountain Mine NOA – Proposed Action and Alternatives A and B	**KOP Location**
Key Observation Point	KOP 1, View to E Following reclamation	UTM Zone 11, NAD83
VRM Class	III and IV	E 0607680 N 4422822

Section B. Characteristic Landscape Description

	Land/Water	Vegetation	Structures
Form	Flat to rolling terrain	Indistinct, irregular	None
Line	Horizontal and diagonal	Complex	None
Color	Tan, gray-green, dark green	Gray-green, dark green	None
Texture	Coarse, rough	Smooth, gradational	None

Section C. Proposed Activity Description

	Land/Water	Vegetation	Structures
Form	Flat to rolling terrain	Indistinct, irregular	None
Line	Horizontal and diagonal	Complex	None
Color	Light tan	Gray-green, dark green	None
Texture	Coarse, rough	Smooth, gradational	None

Section D. Contrast Rating

	Land/Water	Vegetation	Structures
Form	3	3	4
Line	3	3	4
Color	3	3	4
Texture	3	3	4

Notes: Degree of Contrast: 1 = Strong; 2 = Moderate; 3 = Weak; 4 = None

Does project design meet visual resource management objectives? Yes. Following successful reclamation, the degree of contrast from reclaimed areas would be weak and project elements would tend to blend in with the surroundings.

Additional mitigating measures recommended. None.

Evaluator: R. Duncan, JBR Environmental Consultants
Date: July 2007, revised February 2009

Visual Contrast Rating Worksheet

Section A. Project Information

Project Name	Bald Mountain Mine NOA – Proposed Action and Alternatives A and B	**KOP Location**
Key Observation Point	KOP 2, View to SW During active mining	UTM Zone 11, NAD83
VRM Class	IV	E 0623503
		N 4431354

Section B. Characteristic Landscape Description

	Land/Water	Vegetation	Structures
Form	Flat to rolling terrain	Indistinct, irregular	None
Line	Horizontal and diagonal	Complex	None
Color	Gray-green, dark green	Gray-green, dark green	None
Texture	Coarse, rough	Smooth, gradational	None

Section C. Proposed Activity Description

	Land/Water	Vegetation	Structures
Form	Flat to rolling terrain	Indistinct, irregular	None
Line	Horizontal and diagonal	Complex	None
Color	Tan	Gray-green, dark green	None
Texture	Coarse, rough	Smooth, gradational	None

Section D. Contrast Rating

	Land/Water	Vegetation	Structures
Form	3	2	4
Line	3	2	4
Color	2	2	4
Texture	2	2	4

Notes: Degree of Contrast: 1 = Strong; 2 = Moderate; 3 = Weak; 4 = None

Does project design meet visual resource management objectives? Yes. During active mining the North Area RDA would contrast with surrounding undisturbed landforms and vegetation. The contrast would be moderate because of the distance from the observer and relatively small portion of the view affected. Class IV allows for moderate contrast.

Additional mitigating measures recommended. None.

Evaluator: R. Duncan, JBR Environmental Consultants
Date: July 2007, revised February 2009

Visual Contrast Rating Worksheet

Section A. Project Information

Project Name	Bald Mountain Mine NOA – Proposed Action and Alternatives A and B	**KOP Location**
Key Observation Point	KOP 2, View to SW Following reclamation	UTM Zone 11, NAD83
VRM Class	IV	E 0623503
		N 4431354

Section B. Characteristic Landscape Description

	Land/Water	**Vegetation**	**Structures**
Form	Flat to rolling terrain	Indistinct, irregular	None
Line	Horizontal and diagonal	Complex	None
Color	Gray-green, dark green	Gray-green, dark green	None
Texture	Coarse, rough	Smooth, gradational	None

Section C. Proposed Activity Description

	Land/Water	**Vegetation**	**Structures**
Form	Flat to rolling terrain	Indistinct, irregular	None
Line	Horizontal and diagonal	Complex	None
Color	Tan	Gray-green, dark green	None
Texture	Coarse, rough	Smooth, gradational	None

Section D. Contrast Rating

	Land/Water	**Vegetation**	**Structures**
Form	3	3	4
Line	3	3	4
Color	3	3	4
Texture	3	3	4

Notes: Degree of Contrast: 1 = Strong; 2 = Moderate; 3 = Weak; 4 = None

Does project design meet visual resource management objectives? Yes. Following successful reclamation, the degree of contrast would be weak and the North Area RDA would tend to blend in with the surrounding area.

Additional mitigating measures recommended. None.

Evaluator: R. Duncan, JBR Environmental Consultants
Date: July 2007, revised February 2009

Visual Contrast Rating Worksheet

Section A. Project Information

Project Name	Bald Mountain Mine NOA – Proposed Action and Alternatives A and B	**KOP Location**
Key Observation Point	KOP 3, View to SW During active mining	UTM Zone 11, NAD83
VRM Class	III	E 0631057 N 4424899

Section B. Characteristic Landscape Description

	Land/Water	Vegetation	Structures
Form	Flat to rolling terrain	Indistinct, irregular	None
Line	Horizontal and diagonal	Complex	None
Color	Gray-green, dark green	Gray-green, dark green	None
Texture	Coarse, rough	Smooth, gradational	None

Section C. Proposed Activity Description

	Land/Water	Vegetation	Structures
Form	Flat to rolling terrain	Indistinct, irregular	None
Line	Horizontal and diagonal	Complex	None
Color	Tan	Gray-green, dark green	None
Texture	Coarse, rough	Smooth, gradational	None

Section D. Contrast Rating

	Land/Water	Vegetation	Structures
Form	3	1	4
Line	3	1	4
Color	1	1	4
Texture	1	1	4

Notes: Degree of Contrast: 1 = Strong; 2 = Moderate; 3 = Weak; 4 = None

Does project design meet visual resource management objectives? No. During active mining the East Sage RDA would contrast with surrounding undisturbed landforms and vegetation. The contrast would be strong because of the large portion of the view affected.

Additional mitigating measures recommended. None.

Evaluator: R. Duncan, JBR Environmental Consultants
Date: July 2007, revised February 2009

Visual Contrast Rating Worksheet

Section A. Project Information

Project Name	Bald Mountain Mine NOA – Proposed Action and Alternatives A and B	**KOP Location**
Key Observation Point	KOP 3, View to SW Following reclamation	UTM Zone 11, NAD83
VRM Class	III	E 0631057 N 4424899

Section B. Characteristic Landscape Description

	Land/Water	Vegetation	Structures
Form	Flat to rolling terrain	Indistinct, irregular	None
Line	Horizontal and diagonal	Complex	None
Color	Gray-green, dark green	Gray-green, dark green	None
Texture	Coarse, rough	Smooth, gradational	None

Section C. Proposed Activity Description

	Land/Water	Vegetation	Structures
Form	Flat to rolling terrain	Indistinct, irregular	None
Line	Horizontal and diagonal	Complex	None
Color	Tan	Gray-green, dark green	None
Texture	Coarse, rough	Smooth, gradational	None

Section D. Contrast Rating

	Land/Water	Vegetation	Structures
Form	3	2	4
Line	3	2	4
Color	2	2	4
Texture	2	2	4

Notes: Degree of Contrast: 1 = Strong; 2 = Moderate; 3 = Weak; 4 = None

Does project design meet visual resource management objectives? Yes. Following successful reclamation, the degree of contrast of the East Sage RDA would be moderate because of the distance and the similarity to the color and texture of surrounding land. The RDA would tend to blend in with the existing hills. Management objectives for VRM Class III allow for moderate contrast.

Additional mitigating measures recommended. None.

Evaluator: R. Duncan, JBR Environmental Consultants
Date: July 2007, revised February 2009

Visual Contrast Rating Worksheet

Section A. Project Information

Project Name	Bald Mountain Mine NOA – Proposed Action and Alternative A	**KOP Location**
Key Observation Point	KOP 4, View to SW During active mining	UTM Zone 11, NAD83
VRM Class	III	E 0630734
		N 4420006

Section B. Characteristic Landscape Description

	Land/Water	**Vegetation**	**Structures**
Form	Flat to rolling terrain	Indistinct, irregular	Irregular (power poles)
Line	Horizontal and diagonal	Complex	Vertical
Color	Tan, gray-green, dark green	Gray-green, dark green	Dark brown
Texture	Coarse, rough	Smooth, gradational/abrupt	Smooth

Section C. Proposed Activity Description

	Land/Water	**Vegetation**	**Structures**
Form	Flat terrain	Indistinct, irregular	Irregular
Line	Horizontal	Complex	Vertical
Color	Tan, gray-green	Gray-green	Dark brown
Texture	Smooth	Abrupt	Smooth

Section D. Contrast Rating

	Land/Water	**Vegetation**	**Structures**
Form	1	1	4
Line	1	1	4
Color	1	1	4
Texture	1	1	4

Notes: Degree of Contrast: 1 = Strong; 2 = Moderate; 3 = Weak; 4 = None

Does project design meet visual resource management objectives? No. During active mining the leach pad would contrast with surrounding undisturbed landforms and vegetation. The contrast would be strong because of the scale and marked differences in color and texture.

Additional mitigating measures recommended. None.

Evaluator: R. Duncan, JBR Environmental Consultants
Date: July 2007, revised February 2009

Visual Contrast Rating Worksheet

Section A. Project Information

Project Name	Bald Mountain Mine NOA – Proposed Action and Alternative A	**KOP Location**
Key Observation Point	KOP 4, View to SW Following reclamation	UTM Zone 11, NAD83
VRM Class	III	E 0630734 N 4420006

Section B. Characteristic Landscape Description

	Land/Water	**Vegetation**	**Structures**
Form	Flat to rolling terrain	Indistinct, irregular	Irregular (power poles)
Line	Horizontal and diagonal	Complex	Vertical
Color	Tan, gray-green, dark green	Gray-green, dark green	Dark brown
Texture	Coarse, rough	Smooth, gradational/abrupt	Smooth

Section C. Proposed Activity Description

	Land/Water	**Vegetation**	**Structures**
Form	Flat terrain	Indistinct, irregular	Irregular
Line	Horizontal	Complex	Vertical
Color	Tan, gray-green	Gray-green	Dark brown
Texture	Smooth	Abrupt	Smooth

Section D. Contrast Rating

	Land/Water	**Vegetation**	**Structures**
Form	2	2	4
Line	2	2	4
Color	2	2	4
Texture	2	2	4

Notes: Degree of Contrast: 1 = Strong; 2 = Moderate; 3 = Weak; 4 = None

Does project design meet visual resource management objectives? Yes. Following successful reclamation the degree of contrast would be moderate. The color and texture of the reclaimed leach pad would blend more with surrounding landforms and vegetation but the form would likely not appear entirely natural. Management objectives for VRM Class III allow for moderate contrast.

Additional mitigating measures recommended. None.

Evaluator: R. Duncan, JBR Environmental Consultants
Date: July 2007, revised February 2009

Visual Contrast Rating Worksheet

Section A. Project Information

Project Name	Bald Mountain Mine NOA –Alternative B	**KOP Location**
Key Observation Point	KOP 4, View to SW During active mining	UTM Zone 11, NAD83
VRM Class	III	E 0630734
		N 4420006

Section B. Characteristic Landscape Description

	Land/Water	**Vegetation**	**Structures**
Form	Flat to rolling terrain	Indistinct, irregular	Irregular (power poles)
Line	Horizontal and diagonal	Complex	Vertical
Color	Tan, gray-green, dark green	Gray-green, dark green	Dark brown
Texture	Coarse, rough	Smooth, gradational/abrupt	Smooth

Section C. Proposed Activity Description

	Land/Water	**Vegetation**	**Structures**
Form	Flat terrain	Indistinct, irregular	Irregular
Line	Horizontal	Complex	Vertical
Color	Tan, gray-green	Gray-green	Dark brown
Texture	Smooth	Abrupt	Smooth

Section D. Contrast Rating

	Land/Water	**Vegetation**	**Structures**
Form	1	1	4
Line	1	1	4
Color	1	1	4
Texture	1	1	4

Notes: Degree of Contrast: 1 = Strong; 2 = Moderate; 3 = Weak; 4 = None

Does project design meet visual resource management objectives? No. During active mining the leach pad, although smaller than the Proposed Action and Alternative A, would still contrast with surrounding undisturbed landforms and vegetation. The contrast would be strong because of the scale and marked differences in color and texture.

Additional mitigating measures recommended. None.

Evaluator: R. Duncan, JBR Environmental Consultants
Date: July 2007, revised February 2009

Visual Contrast Rating Worksheet

Section A. Project Information

Project Name	Bald Mountain Mine NOA –Alternative B	**KOP Location**
Key Observation Point	KOP 4, View to SW Following reclamation	UTM Zone 11, NAD83
VRM Class	III	E 0630734
		N 4420006

Section B. Characteristic Landscape Description

	Land/Water	Vegetation	Structures
Form	Flat to rolling terrain	Indistinct, irregular	Irregular (power poles)
Line	Horizontal and diagonal	Complex	Vertical
Color	Tan, gray-green, dark green	Gray-green, dark green	Dark brown
Texture	Coarse, rough	Smooth, gradational/abrupt	Smooth

Section C. Proposed Activity Description

	Land/Water	Vegetation	Structures
Form	Flat terrain	Indistinct, irregular	Irregular
Line	Horizontal	Complex	Vertical
Color	Tan, gray-green	Gray-green	Dark brown
Texture	Smooth	Abrupt	Smooth

Section D. Contrast Rating

	Land/Water	Vegetation	Structures
Form	2	2	4
Line	2	2	4
Color	2	2	4
Texture	2	2	4

Notes: Degree of Contrast: 1 = Strong; 2 = Moderate; 3 = Weak; 4 = None

Does project design meet visual resource management objectives? Yes. Following successful reclamation, the degree of contrast would be moderate. The color and texture of the reclaimed leach pad would blend more with surrounding landforms and vegetation but the form would likely not appear entirely natural. Management objectives for VRM Class III allow for moderate contrast.

Additional mitigating measures recommended. None.

Evaluator: R. Duncan, JBR Environmental Consultants
Date: July 2007, revised February 2009

APPENDIX J

Programmatic Agreement

PROGRAMMATIC AGREEMENT

AMONG THE BUREAU OF LAND MANAGEMENT, ELY DISTRICT, NEVADA NEVADA STATE HISTORIC PRESERVATION OFFICE, AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION REGARDING THE TREATMENT OF HISTORIC PROPERTIES DURING MINERAL DEVELOPMENT IN THE BALD MOUNTAIN MINING DISTRICT BY BALD MOUNTAIN MINE

WHEREAS, the Bureau of Land Management, Ely District, ("BLM") has determined that mineral development in the Bald Mountain Mining District ("BMMD") by Bald Mountain Mine ("BMM"), situated in White Pine County, Nevada, may have an effect upon properties eligible for inclusion in the National Register of Historic Places, and has consulted with the Nevada State Historic Preservation Officer ("SHPO") and the Advisory Council on Historic Preservation ("COUNCIL") pursuant to Section 800.13 of the regulations (36 CFR 800) implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470(f)), and

WHEREAS, BMM, the operator of several mines within the BMMD, participated in the consultation and has been invited to concur in this Programmatic Agreement, and

WHEREAS, this Programmatic Agreement is intended to cover all aspects of mineral development in the BMMD which is controlled or operated by BMM, and

WHEREAS, the definitions given in the Programmatic Agreement of August, 1990 among the Bureau of Land Management, Nevada State Office, Nevada State Historic Preservation Office, and the Advisory Council on Historic Preservation Regarding the Identification, Evaluation and Treatment of Historic Properties Throughout the State of Nevada on Lands Managed by the Bureau of Land Management, Nevada State Office (BLM Statewide Agreement) are applicable throughout this Agreement;

NOW THEREFORE, the parties agree that mineral development in the BMMD shall be administered in accordance with the following stipulations to satisfy the BLM's Section 106 responsibilities for all individual projects undertaken within the BMMD.

PURPOSE

BMM proposes to explore for mineral deposits and to conduct mineral extraction activities ("Undertaking") in the BMMD which are multi-year in scope and located on public lands with interspersed patented (private) land. Cultural inventories have identified historic properties in the area of the undertaking which are eligible to the National Register of Historic Places (NRHP). Other historic properties have been identified in the area of the undertaking that may be determined to be eligible after further evaluation.

The purpose of this Programmatic Agreement is to establish an understanding between the BLM, the COUNCIL, the SHPO, and BMM as to how the consultation process under Section 106 of the National Historic Preservation Act will be implemented with regard to the Undertaking.

The Programmatic Agreement ("Agreement") defines general and specific measures that will be undertaken by all parties to ensure that the mutual objectives and individual requirements of the National Historic Preservation Act are fulfilled.

INTENT

Subject to the limitations found in the BLM Statewide Agreement and guidelines in Stipulation A.3. of this Agreement, historic properties will be treated in such a way that effects are avoided or mitigated to the extent practicable, regardless of surface ownership.

AREA DESCRIPTIONS

The cultural resources review area for this undertaking is the Bald Mountain Mining District (BMMD) as defined in Appendix A.

Prior to conducting activities in the BMMD related to proposed mineral exploration or extraction on lands that have not been disturbed by the existing mining operations or within areas of known historic properties (regardless of ownership), BMM shall submit to the BLM plans of operation or amendments to existing plans as appropriate for BLMs review under this agreement.

STIPULATIONS

The BLM shall ensure that the following stipulations are implemented:

A. Identification

1. Upon receipt of BMMs proposed mine development plan of operations or any amendments to existing plans of operations, BLM shall seek to identify interested persons pursuant to 36 CFR 800.1(c)(2) and 36 CFR 800.4(a)(1)(iii).

2. The BLM shall ensure that appropriate cultural resource inventory of the Area of Potential Effect.(APE) of all activity areas or portions thereof, not previously inventoried is completed, and that appropriate reports are prepared.

3. The BLM shall ensure that an inventory of the APE of any activity area is completed in a manner consistent with stipulation A.2. of this agreement, the BLM Statewide Agreement and the BLMs *Cultural Resources Inventory General Guidelines* (4th edition, January 1990) or any subsequent edition issued by the BLM.

4. The BLM shall ensure that the inventory is conducted by BMM in consultation with the BLM, and that an inventory report is submitted to the BLM by BMM for the BLMs approval. The approved inventory report shall be submitted by the BLM to the SHPO, and interested persons as appropriate, for review and comment. BLM shall consult with the SHPO to resolve the eligibility of identified cultural resources per 36 CFR 800.4(c).

5. The BLM shall ensure that the level, intensity and methods of recording cultural resources conform to the standards identified in Stipulation A.3.

B. Resolving Eligibility

1. The BLM, in consultation with the SHPO, shall ensure that all cultural resources located within the APE of an activity area are evaluated for eligibility to the NRHP prior to the initiation of activities that may affect historic properties.

2. Information gathered by the inventory process may be inadequate to allow determination of a cultural resource's eligibility for the NRHP. In such case, the BLM may, after obtaining SHPOs concurrence on an evaluation plan which may include subsurface testing, authorize the plan under the mandates of the Archeological Resources Protection Act (16 U.S.C. 470aa *et seq.*).

3. In developing a subsurface evaluation plan for SHPO concurrence, the BLM shall ensure that any testing is limited to defining the nature, density and distribution of materials in potential historic properties. Subsurface testing is intended to provide the minimum data necessary to make final evaluations of NRHP eligibility and to devise treatment options responsive to the information potential of the historic properties.

4. Documentation of inventory and evaluation results, including eligibility recommendations, shall be reviewed by the BLM. Upon approval, the BLM shall forward this documentation to the SHPO for review and comment per Stipulation A.4.

5. If the SHPO and the BLM disagree regarding the eligibility of properties for listing on the NRHP, the BLM shall seek a formal determination of eligibility from the Keeper of the National Register in accordance with 36 CFR 800.4. The Keeper's determination will be considered final. BMM will be kept informed of the progress in a timely manner.

C. Treatment

1. In developing treatment plans, the BLM in consultation with SHPO and interested persons, shall determine the precise nature of effects that can be anticipated to the values of historic properties identified in the APE in accordance with 36 CFR 800.5. BLM shall ensure that BMM seeks to avoid properties eligible for inclusion in the NRHP through design of project facilities, relocation of facilities, or by other means, to the extent practicable.

2. Recognizing that avoidance may not be feasible or prudent, the BLM, in consultation with SHPO, BMM and interested persons, shall ensure that BMM develops an appropriate treatment plan designed to lessen or mitigate project-related effects to archaeological resources. For properties eligible under criteria *a* through c (36 CFR 60.4) other forms of mitigation may be considered in the treatment plan in lieu of or in addition to data recovery (*e.g.* oral history, historic markers, exhibits, interpretive brochures or publications).

3. When archaeological data recovery is the preferred treatment option for an eligible property or properties, the BLM shall ensure that BMM develops a plan for the recovery of archaeological data based on an appropriate research design and that the plan is submitted to the SHPO and COUNCIL as stipulated in H.2., for a concurrent 30-day review and comment period. Such data recovery plans and historic or architectural documentation (for historic properties eligible under criterion *d*) shall be consistent with the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716-37) and shall conform to Stipulation A.3.

4. If the SHPO, COUNCIL or an interested person objects to all or part of the proposed treatment plan, the BLM shall attempt to resolve the objection pursuant to Stipulation J. Upon completion of the consultation process, the BLM shall ensure that the treatment plan and any modifications to it resulting from the negotiations are implemented.

   a. The BLM shall ensure that any human remains and grave-related artifacts encountered during data recovery are treated with the respect due such evidence and according to federal law, and, to the extent not inconsistent with federal law, state laws and local ordinances.

   b. The BLM shall ensure that all records and materials resulting from identification and treatment efforts are curated in accordance with 36 CFR 79 by a BLM-approved facility in Nevada, and that all materials to be returned to their owners will be maintained in accordance with 36 CFR 79 until the materials analysis is complete and the materials are returned.

      (1) Unless otherwise negotiated all materials must be curated or returned to their owners when the final report is accepted by the BLM.

      (2) The BLM shall hold a surety bond from BMM as specified in Stipulation I until curation is complete.

   c. The BLM shall ensure that all final archeological reports resulting from actions pursuant to this Agreement will be provided to the SHPO and COUNCIL, and made available to other interested parties, and to the National Technical Information Service (NTIS). The BLM shall ensure that all such reports are responsive to contemporary professional standards, and to the Department of the Interior's *Formal Standards for Final Reports of Data Recovery Program* (42 FR 5377-79).

      (1) Precise locational data may be provided only in a separate appendix if it appears that release of locational data could jeopardize historic properties.

      (2) A draft final report shall be due as stated in Stipulation H.3. unless otherwise negotiated.

D. Discovery Situations

1. Cultural resources, not previously identified, which are discovered while conducting mining activities shall be subject to this Agreement. If such cultural resources are discovered, or if known historic properties are being affected in an unanticipated manner, mining related activities within the general vicinity of the discovered resources will cease immediately and BMM shall notify the BLM authorized officer.

2. The BLM shall notify the SHPO and COUNCIL and consider SHPOs initial comments on the discovery. The COUNCIL may offer comments within two days of notification if it chooses. Within two working days of notification to the SHPO and COUNCIL, the BLM shall notify BMM, SHPO and interested persons, as appropriate, of the BLMs decision whether to allow mining related activities to proceed or to seek mitigative measures for the discovered cultural resources per 36 CFR 800.11.

3. If, in consultation with the SHPO, BLM determines that mitigation is appropriate, the BLM shall notify the COUNCIL of the proposed mitigative measures, and request comments from the SHPO and interested persons, as appropriate, on means of mitigating such properties. Any comments offered by the SHPO and interested persons will be documented and made available for public inspection. The SHPO and other interested persons as appropriate will provide BLM with comments in two working days so that they can be considered and the BLM can make a decision regarding the nature and extent of mitigative efforts within seven working days of BLMs notification to BMM of the need for mitigation. The BLM shall notify the SHPO, COUNCIL and interested persons of its decision and shall ensure that such mitigative actions are implemented

4. In the event an objection arises from the SHPO or interested persons, regarding a discovery or the means by which it will be treated, the BLM shall attempt to resolve the objection in accordance with Stipulation J.

5. The BLM shall ensure that reports of mitigation efforts for discovery situations are completed in a timely manner and conform to the Department of the Interior's Formal Standards for *Final Reports of Data Recovery Program* (42 FR 5377-79). Drafts of such reports shall be submitted to the SHPO for a 30-day review and comment as stipulated in H.2. Final reports shall be submitted to the SHPO, COUNCIL and interested persons for informational purposes.

6. Mining activity in the area of the discovery or affected site will be halted until BMM is notified by the BLM Authorized Officer that mitigation is complete and activities can resume.

E. Other Considerations

1. The BLM shall ensure that all stipulations of this Agreement are carried out by the BLM,

BMM, and all of its contractors or other personnel. Non-conformance to the stipulations of this Agreement shall invoke the non-compliance provisions of 43 CFR 3809 and may result in a letter of non-compliance or other litigative actions.

2. The BLM shall ensure that historic, architectural, and archaeological work conducted pursuant to this Agreement is carried out by, or under the direct supervision of persons meeting qualifications set forth in the Secretary of the Interior's *Professional Qualification Standards* (36 CFR 61) and acceptable to the BLM to conduct an inventory and report the results to the BLM.

3. BMM, in cooperation with the BLM and the SHPO, shall ensure that all its personnel, and all the personnel of its contractors, are directed not to engage in the illegal collection of historic and prehistoric materials. BMM shall cooperate with the BLM to ensure compliance with the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa *et seq.*).

4. BMM shall bear the expense of identification, evaluation, and treatment of all historic properties directly or indirectly affected by BMM-related activity to the extent that such properties are situated on land owned or controlled by BMM as shown in Appendix A. Such costs shall include, but not be limited to, pre-field planning, field work, post-fieldwork analysis, research and report preparation, interim and summary report preparation, public interpretation, and costs associated with the curation of project documentation and artifact collections.

F. Reports and Monitoring

The BLM, the SHPO, and the COUNCIL may monitor actions carried out pursuant to this Agreement, and the COUNCIL shall review such actions when so requested. The BLM shall submit a monitoring report to the SHPO and the COUNCIL at least every 12 months. This report will assist the SHPO and the COUNCIL in monitoring actions carried out under this Agreement and provide a basis for review. The reporting year shall conform to the federal fiscal year and the report will be submitted to the SHPO and the COUNCIL by June 1st of the year following the fiscal year under review.

G. Notices to Proceed

Notices to Proceed (NTP) may be issued by the BLM to BMM under any of the following conditions:

1. the APE has been inventoried and BLM and SHPO have determined that there are no historic properties within the APE;

2. evaluation of potentially eligible sites has been conducted and BLM and SHPO have determined that the site(s) are not eligible;

3. a treatment option for historic properties affected by the activity has been approved by the BLM after consultation with the SHPO and interested persons. If the treatment option selected for a historic property requires fieldwork to be performed, the BLM may authorize BMM to proceed with the specific mining activities that would affect the historic property after:

   a. the fieldwork phase of the treatment option has been completed; and,

   b. the BLM has accepted a summary description of the fieldwork performed and a reporting schedule for that work; and,

   c. BMM has posted a surety acceptable to the BLM as stipulated in I. below for post-fieldwork costs of the treatment plan.

H. Time Frames

1. Inventory: The BLM shall review and comment on the results of any cultural resources inventory submitted by BMM within the time frames indicated in the BLMs *Cultural Resources Inventory General Guidelines* (4th edition, January 1990) or any subsequent edition issued by the BLM.

2. Consultation: The BLM shall submit the results of all identification and evaluation efforts, including discovery situations, and treatment plans to the SHPO, COUNCIL and interested persons for a 30-day concurrent review and comment period. If the SHPO, COUNCIL or interested persons do not respond to the BLM within 30 days of receipt of a submittal, the BLM shall presume concurrence with the BLMs findings and recommendations as detailed in the submittal. The concurring party, BMM, will be apprised by the BLM as to the status of these efforts.

3. Reports: A draft final report of all identification, evaluation, treatment or other mitigative activities will be due to the BLM within 9 months after the completion of the fieldwork associated with the activity, unless otherwise negotiated. The concurring party, BMM, will be apprised by the BLM as to the status of the draft reviews.

4. Curation: All records, photographs, maps, field notes, artifacts, and other materials collected or developed for any identification, evaluation, or treatment activities will be curated in a facility approved by the BLM at the time the final report associated with that activity is accepted by the BLM, unless materials and artifacts must be returned to the owner.

I. Surety Bonds

1. BMM will post a surety with the BLM in an amount sufficient to cover all post-fieldwork costs associated with implementing a treatment plan or other mitigative activities, as negotiated by BMM where they contract for services in support of this Agreement. Such costs may include, but are not limited to post-field analyses, research and report preparation, interim and summary reports preparation, public interpretation, and the curation of project documentation and artifact collections in a BLM-approved curation facility. The surety shall be posted prior to BLM issuing a notice to proceed.

2. The surety posted shall be subject to forfeiture if the post-fieldwork tasks are not completed within the time period established by the treatment option selected; provided, however, that the BLM and BMM may agree to extend any such time periods. The BLM shall notify BMM that the surety is subject to forfeiture and shall allow BMM 15 days to respond before action is taken to forfeit the surety.

3. The surety shall be released, in whole or in part, as specific post-fieldwork tasks are completed and accepted by the BLM.

J. Dispute Resolution

1. If the SHPO issues an objection regarding a matter submitted by the BLM for review, the BLM shall consult with the SHPO to resolve the objection. If then, either party determines that the objection cannot be resolved, the BLM shall request the comments of the COUNCIL. The COUNCIL shall provide its comments, if any, within 30 days after receipt of the request from the BLM. Any COUNCIL comment provided in response to such a request will be taken into account by the BLM and the BLM will notify the COUNCIL and SHPO of its decision. The BLMs responsibility to carry out all actions under this Agreement that are not the subject of the dispute will remain unchanged.

2. If an objection is raised by a representative of local government, or a member of the public, the BLM shall take the objection into account and consult as needed with the objecting party and the SHPO in an attempt to resolve the objection. If the BLM determines that the objection cannot be resolved, it shall request the comments of the COUNCIL. The COUNCIL shall provide its comments, if any, within 30 days after receipt of the request from the BLM. Any COUNCIL comment provided in response to such a request will be taken into account by the BLM and the BLM will notify the COUNCIL, SHPO and objecting party of its decision. The BLMs responsibility to carry out all actions under this Agreement that are not the subject of the dispute will remain unchanged.

K. Amendment

Any party to this Agreement may request that this Agreement be amended, whereupon the parties will consult in accordance with 36 CFR 800.13 to consider such amendment.

L. Termination

Any party to this Agreement may terminate the Agreement by providing thirty (30) days notice to the other parties, provided that the parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of a termination, the BLM will comply with 36 CFR 800.4 through 800.6 with regard to individual actions covered by this Agreement.

M. Execution

1. Execution and implementation of this Agreement evidences that the BLM has afforded the COUNCIL a reasonable opportunity to comment on the Undertaking and its effects on historic properties and that BLM has satisfied its Section 106 responsibilities for all individual actions associated with the development of the Bald Mountain Mine District.

2. In the event that the BLM does not carry out the requirements of this Agreement, the BLM shall comply with 36 CFR 800.4 through 800.6 with regard to individual actions covered by this agreement.

3. This agreement shall become effective on the date of the last signature below, and shall remain effective, unless earlier terminated as provided in Stipulation L, until the later of a date of 10 years from the effective date or until the development of the Bald Mountain Mine District, including all exploration, mining, and reclamation, is complete.

CONSULTING PARTIES:

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: _____ Date: 12/15/95

Title: Executive Director

BUREAU OF LAND MANAGEMENT

By: _____ Date: 10/19/95

Title: Ely District Manager

NEVADA STATE HISTORIC PRESERVATION OFFICER

By: Allen M Baldwin, Deputy for Date : 11/21/95

Title: State Historic Preservation Officer

CONCURRING PARTY:

PLACER DOME U.S., INC

By: _____ Date : 10/16/95

Title: Manager

APPENDIX A

Bald Mountain Mining District

The Bald Mountain Mining District comprises the cultural resource review area for the purposes of this Programmatic Agreement. The cultural resource review area consists of all lands within the boundaries depicted on the attached Figure 1. The parties agree that Figure 1 shall be amended from time to time as may be necessary to include any additional properties or mining interests BMM may acquire for development of mineral resources within the Bald Mountain Mining District.

The parties acknowledge the property owned or controlled by BMM is comprised of scattered patented mining claims within contiguous and noncontiguous unpatented mining and mill site claims on public land administered by the BLM. These claim areas comprise the Bald Mountain Mining District as depicted on Figure 1.

APPENDIX B

Sequential Planning

The Area of Potential Effect (APE) encompasses identified historic properties, not all of which need to be dealt with immediately upon the initiation of a specific mineral development project. Therefore, for those identified historic properties, a general schedule of events for evaluating and treating those properties is outlined. Timing of appropriate evaluation and treatment of historic properties will occur in advance of proposed development activities and future exploration activities as described in the BLM-approved BMM Plans of Operations (POOs).

A. For BMM POOs exploration and development activities occurring on lands (regardless of surface ownership) within the BMMD that have been previously inventoried:

1. BMM shall notify the BLM prior to initiating activities which may affect a property or properties determined eligible or potentially eligible for the NRHP. Potential effects to properties will be determined by the BLM.

2. Upon receipt of a notification regarding potentially eligible properties, BLM will require that an evaluation program, which may include subsurface testing, be approved by the BLM and implemented by BMM, and that a report assessing eligibility be prepared. Eligibility recommendations presented in the report shall be reviewed by the BLM, in consultation with the SHPO to determine eligibility.

3. Upon receipt of a notification regarding properties that have already been determined to be eligible, the BLM will, in consultation with the SHPO, interested persons and BMM, select a treatment option.

4. Where fieldwork is required by the treatment plan, BLM may issue BMM a Notice to Proceed (NTP) with mining operations in the activity area after:

   a. the fieldwork phase of the treatment plan has been completed;

   b. a summary of the fieldwork has been accepted by BLM; and,

   c. BMM has provided a surety for post-fieldwork costs acceptable by BLM as stipulated in I.

B. For activities amended to BMM POOs, proposed to occur on lands (regardless of ownership) within the BMMD that have not been previously inventoried:

1. BMM shall retain a qualified archaeologist, historian or architectural historian meeting the Secretary of the Interior's *Professional Qualification Standards* (36 CFR 61) and acceptable to the BLM to conduct an inventory and report the results to the BLM.

2. The BLM, in consultation with the SHPO, shall review the inventory report for the APE of an activity area and shall determine if it contains cultural resources eligible for inclusion in the NRHP (36 CFR 800.4).

3. If no cultural resources are identified, the BLM may authorize BMM to proceed in the APE of the activity area and notify SHPO and any interested persons of BLMs decision to authorize the activity per 36 CFR 800.4(d).

4. If, after consultation with the SHPO, the cultural resources in the APE of an activity area are determined not eligible for inclusion on the NRHP, the BLM may authorize BMM to proceed in the APE of that activity area per 36 CFR 800.4(d).

5. For any historic properties identified in the APE of the activity area that are determined to be eligible to the NRHP, the procedures outlined in A.1 through 4 above will be followed.

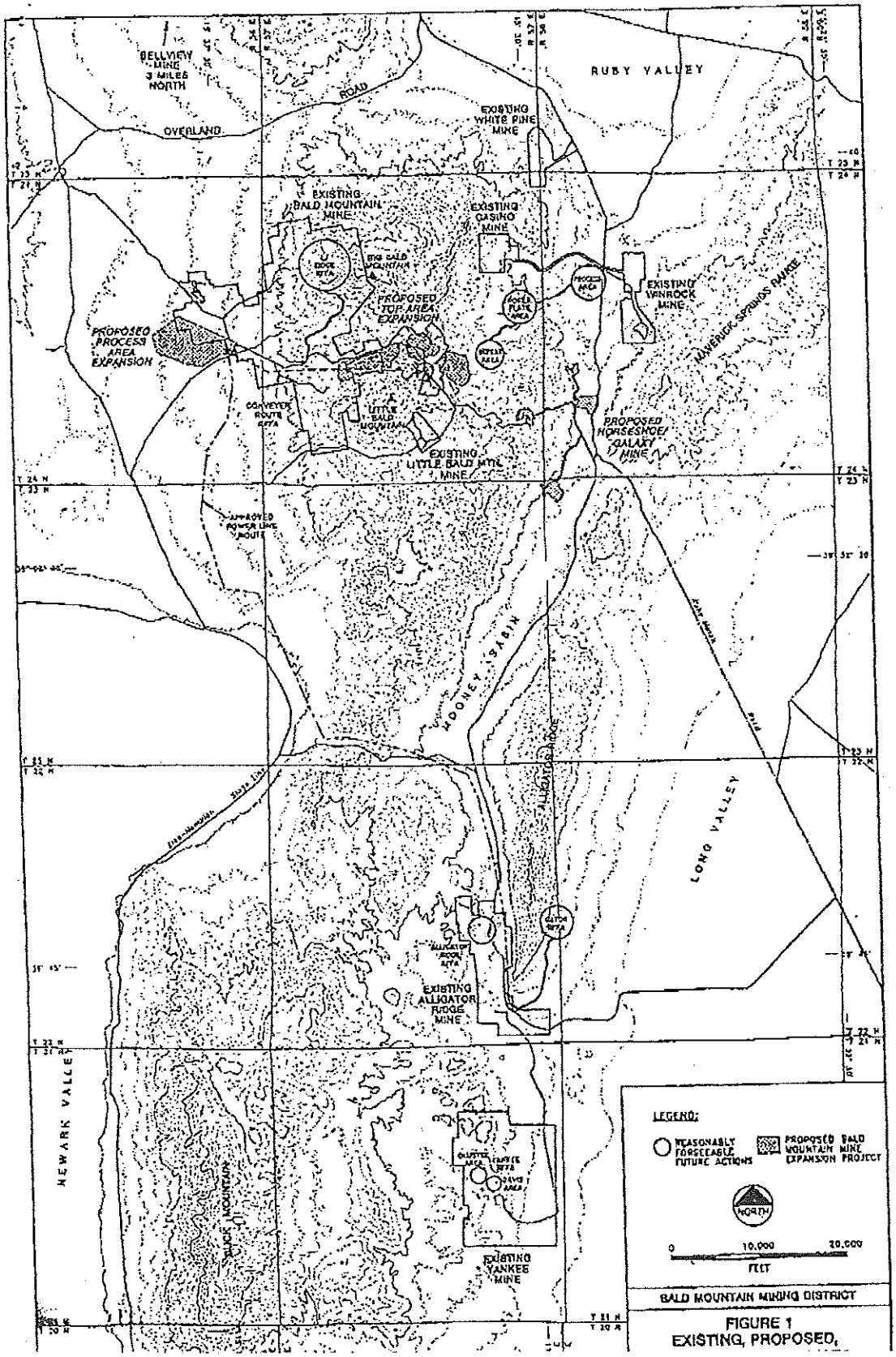

FIGURE 1
EXISTING, PROPOSED,