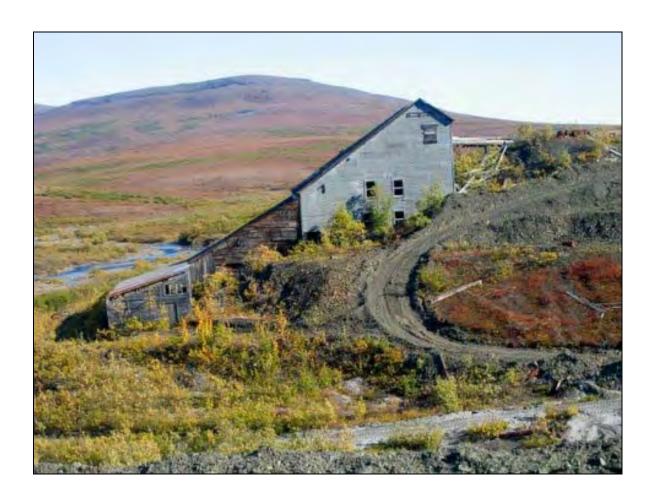


ROCK CREEK MINE AND BIG HURRAH PROJECT ADEC and ADNR ANNUAL REPORT 2008



March 2009

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1 Introduction

This annual report has been prepared by the Environmental Staff of Alaska Gold Company (AGC), a wholly owned subsidiary of NovaGold Resources Inc., in accordance with ADEC Waste Management Permit 2003-DB0051 and ADNR Reclamation Plan Approval F20069578. The report is based solely on information generated by Alaska Gold Company.

Although the Rock Creek Mine and Big Hurrah site were permitted jointly, the two are located over 40 miles apart. In 2008 activities were focused on the Rock Creek Mine. Only minor activities involving water well drilling and pump tests were conducted at Big Hurrah site in 2008. As a result, the majority of this report pertains to the Rock Creek Mine.

The following activities took place at the Rock Creek Mine in 2008:

- Ore was mined, stockpiled and milled;
- Ore was milled and 100,000 tons of paste tails were produced and deposited in the TSF
- Rock Creek Mine was placed into Care and Maintenance;
- All development rock generated was used for construction purposes, therefore no development rock stockpiles were constructed;
- Stage 1 (Commissioning Dam) of the Tailings Storage Facility was completed and Seepage Collection System was installed;
- Components of the Storm Water Management System, including the diversion ditches were completed and the Storm Water Pollution Prevention Plan (SWPPP) was updated
- The inert solid waste landfill facilities were not operational;
- No underground injection of treated mine wastewater took place;
- The baseline groundwater and surface water monitoring programs continued.

In an effort to optimize the efficiency of site personnel, AGC has prepared one annual report to address the requirements of both the Waste Management Permit and Reclamation Plan Approval.

Table 1 summarizes the reporting requirements for the Waste Management Permit and Reclamation Plan Approval, along with the location in the report where the information fulfilling these requirements is located.

Table 1: Location of Reporting Requirements

Ref.	Requirement	Report Ref.
Waste Management Permit 2003-DB0051		
1.9.1	Submit an annual report summarizing the inspection and monitoring results set out in Section 1.8:	
1.8.1.1	 Weekly visual monitoring: Signs of damage at facilities; above-grade portions of groundwater monitoring devices; visible portions of liners; containment structures and retaining walls; erosion control/diversion structures; waste escaping or leachate; unauthorized waste disposal; violations of permit conditions As per Certificate of Reasonable Assurance (AK 0605-05AA), Item (8): Include monitoring of adequacy and effectiveness of Storm Water Management Best Management Practices in weekly visual monitoring required in the Waste Management Permit 	Section 5.1
1.8.1.2	 Surface water monitoring near the sites to ensure that water quality standards are not exceeded outside the waste management areas 	Section 5.2
1.8.1.3	 Quarterly groundwater/seep sampling and analyses 	Section 5.3 Section 5.4
1.8.1.4	 Monitoring of treated pit dewatering wastewater prior to injection to ensure permit limits are met 	Section 5.5
1.8.1.5	 Geochemical monitoring of development rock and tailings samples from Rock Creek Mine to ensure that there is low potential for production of leachate that is 	Section 5.7

Ref.	Requirement	Report Ref.
	acidic and/or contains elevated levels of metals	
1.8.1.6	 Monitoring of paste tailings prior to placement in the TSF (and water recycled to the TSF or contained in the water recycle pond) to ensure that limitations in Sections 1.2.3 and 1.2.4 are met¹ 	Section 5.6
1.8.1.7	 Geochemical monitoring of development rock produced at Big Hurrah designed to detect and segregate PAG development rock as per Section 1.7.1.2 	Section 5.7
1.8.1.8	 Monitoring of seepage, leachate, runoff and down-gradient groundwater of the PAG development rock storage area 	N/A ²
1.8.1.9	■ Fluid management monitoring plan including a water accounting of the quantity of seepage through the TSF and treated pit dewatering wastewater discharged to the injection wells	Section 3.5.2 Section 3.7 Section 4.5
1.8.1.10	• Wildlife monitoring as required in Section 1.4.16	Section 5.8
1.8.1.11	 Water quality monitoring of the recycle water pond 	Section 5.6.2
1.8.2.2	 Submit updated QAPP annually (or whenever changes to methods or labs used occur) 	Section 5.10
1.8.2.4	 Inspections of TSF in conformance with Operations, Maintenance and Emergency Action Manual approved by ADNR 	Section 3.5.1

¹ The requirements outlined in Section 1.8.1.6 of the Waste Management Permit have been modified in the above table to include water recycled to the TSF or contained in the water recycle pond. Section 1.8.1.6 states to monitor paste tailings to ensure the limitations in Sections 1.2.3 and 1.2.4 are met. Section 1.2.4 refers to Cyanide limitations on recycled water.

² Monitoring of seepage, leachate, runoff, and down-gradient groundwater of the PAG development rock storage area will be implemented when this development rock storage area is constructed.

Ref.	Requirement	Report Ref.
1.8.4	 Samples from any groundwater well or surface water monitoring location that had a positive result for CN (previously reported to ADEC) 	Section 5.3 Section 5.2
1.8.5	 Summary of log of wastes disposed in TSF, inert solid waste landfill facilities, development rock dump at Rock Creek, PAG and Non-PAG development rock dump at Big Hurrah, and any backfill of satellite pit at Big Hurrah 	Section 3.9 Section 4.6
1.8.9	 Any additional monitoring of influent, effluent, receiving water, air or solid waste in addition to those in the permit or more frequently than required 	Section 5.9
1.9.4	Adequacy of financial responsibility, including, but not limited to, inflation, significant changes in reclamation activity costs, and concurrent reclamation, expansion or other changes to the operation of the facility	Section 6
1.9.5	Amendments to Plan of Operations affecting waste disposal operations authorized by permit	Section 3.12 Section 4.8
Reclamation Plan Approval - F20069578		
	Summary of results of all fourth quarter monitoring required by state/federal authorizations	Section 5
	Reclamation activities and surface acreage disturbed	Section 3.2 Section 4.2
	Milling activities, quantities of topsoil salvaged and stockpiled, tons (and CY) of ore and development rock mined at the Rock Creek Mine Site, tons (and CY) of ore and both PAG and non-PAG development	Section 3.1 Section 4.1

Ref.	Requirement	Report
		Ref.
	rock mined at the Big Hurrah Site	
	during the previous year and planned	
	for next year, and the available pit	
	volume below the anticipated pit	
	lake elevation at the end of the	
	previous year and expected at the	
	end of the next year	
	As built map submitted with annual	
	report showing current development	
	of all facilities within project area	
	described in the Rock Creek Mine	
	Plan of Operations Volume 4,	
	including cleared and grubbed areas,	
	topsoil or growth medium stockpiles,	
	roads, PAG and Non-PAG waste	
	rock dumps, material sites, tailings	
	facility, facility construction, and un-	
	reclaimed exploration disturbance	
	Adequacy of financial responsibility	Section
	- inflation, changes in reclamation	6
	cost, concurrent reclamation,	
	expansion or other changes to	
	operation of facility	

2 Project Overview

The Rock Creek Mine and Big Hurrah site shown on Figure 1 are located on the Seward Peninsula, along the west coast of Alaska.

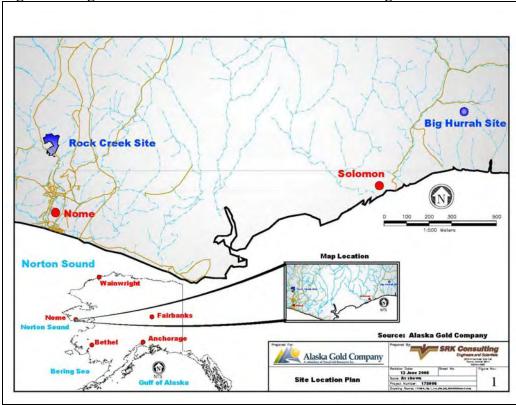


Figure 1: Regional Location of Rock Creek Mine and Big Hurrah site

2.1 Rock Creek Mine

The Rock Creek Mine is located approximately six miles north of Nome, Alaska, in the Snake River drainage, on private lands owned by Bering Straits Native Corporation and Alaska Gold Company. The mine facilities, shown on Figure 2a include an open pit mine, paste tails storage facility (TSF), explosive storage area, injection well filed, organic stockpiles, storm water diversion ditches, and mine roads. Figure 2b includes the following support facilities, mill/gold recovery plant, a maintenance shop, administration and mine dry building, warehouse, water treatment plant, reagent storage, recycle water pond and fuel storage.

Standard drilling and blasting techniques are currently used to produce development rock for construction purposes. The same techniques are used for mining. 100,000 tons of ore was milled in 2008. Milling operations include crushing, screening, gravity separation, flotation and a cyanide leaching process. The expected mine life is four to five years, with potential for additional discovery and expansion. The mine operated on two 12-hour shifts per day for 365 days per year. During operation the mine employed 135 personnel. The mill operated from September 18th to October 9 when the ball mill resister packs burned out shutting the mill down. The mill was recomissioned on the 12th of November and operated until November 24th. On November 24, 2008 the

decision was made to suspend operations at the Rock Creek Mine and enter into a period of Temporary Closure/Care and Maintenance described in section 6 of this report.

2.2 Big Hurrah Site

The Big Hurrah site is located approximately 42 miles east of Nome, in the Solomon River watershed, on land owned by Alaska Gold Company. The Solomon Native Corporation owns the surface rights to the surrounding land. The ultimate facilities, shown on Figure 3, will consist of a smaller open pit gold mine, non-acid-generating development rock stockpile, temporary stockpile for acid-generating development rock that will eventually be placed in the pit, and an ore stockpile. Support facilities include a truck maintenance shop, small administration and mine dry building, explosive storage and fuel storage.

2.3 Environmental Policy

Alaska Gold Company follows the corporate governance of NovaGold, which recognizes environmental management as a corporate priority. NovaGold employees care about preserving the environment for future generations, while also providing for safe, responsible and profitable operations, and by developing natural resources for the benefit of its employees, shareholders, and communities.

In adopting the following Statement of Principles throughout all stages of exploration, development, mining and closure, NovaGold intends to set and maintain standards of excellence for environmental performance at all its operations.

- NovaGold will communicate its commitment to excellence in environmental performance to its subsidiaries, employees, contractors, other agents and the communities in which it operates.
- All new activities and operations will be managed to ensure compliance with applicable laws and regulations. In the absence of regulation, best management practices will be applied to minimize environmental risk.
- Remediation and mitigation of historical mining impacts on properties acquired by NovaGold will be managed through the cooperative involvement of NovaGold with previous owners, government agencies and the community.
- To achieve its commitment to environmental excellence, NovaGold will use an environmental management system that ensures prioritization, planning, implementation, monitoring and honest reporting.
- NovaGold will strive to minimize releases to the air, land or water and will ensure appropriate treatment and disposal of waste.

- NovaGold will allocate the necessary resources to meet its reclamation and environmental obligations.
- NovaGold will continuously seek opportunities to improve its environmental performance through adherence to these principles.
- NovaGold will regularly report progress to its employees, shareholders and the communities in which it operates.

2.4 Regulatory Instruments

The Rock Creek Mine and Big Hurrah site are regulated primarily by the State of Alaska, with oversight by the Federal government. The various permits, approvals and authorizations in effect as of December 31, 2008 are listed in Table 2.

Table 2: List of Regulatory Instruments

Regulatory Instrument	Issued by	Description
Waste Management Permit 2003-DB0051	ADEC	Disposal of wastes from the Rock Creek and Big Hurrah projects to the Tailings Storage Facility, inert solid waste landfills, underground injection of treated wastewater systems, groundwater and surface water monitoring, and management of development rock
Department of the Army Permit POA-2006-742-M	Dept. of the Army	Placement of approximately 15,592,411 cubic yards of fill material into 346.5 acres of waters of the U.S. for development, operation and reclamation of the Rock Creek and Big Hurrah projects
Certificate of Reasonable Assurance	ADEC	Certificate of Reasonable Assurance for Department of the Army Permit POA-2006-742-M
Air Quality Control Minor Permit AQ0978MSS01	ADEC	Installation and operation of emission units in crushing and grinding circuit, shop/warehouse, emergency generators, and CIL, process, mill, laboratory and administration buildings
Underground Injection Control Permit AK- 5X27-001-A	EPA Region 10	Injection of treated mine dewatering wastewater and a one time disposal of treated wastewater contained in the Tailings Storage Facility associated with closure of the Rock Creek Mine Project utilizing Class V injection wells
NPDES General Permit for Storm Water Discharges from Construction Activities No. AKR10BT00	EPA and ADEC	Discharge of storm water from construction activities at the Rock Creek Project
Reclamation Plan	ADNR	Approval of Reclamation Plan for the Rock Creek

Regulatory Instrument	Issued by	Description
Approval F20069578		and Big Hurrah Projects
Final Consistency Response AK 0605-05AA	ADNR	Final response regarding consistency of Rock Creek and Big Hurrah Project with the Alaska Coastal Management Program and affected coastal district's enforceable policies
Certificate of Approval to Construct A Dam AK00309	ADNR	Construction of the Tailings Storage Facility at the Rock Creek Mine Project
Fish Habitat Permit FH06-III-0233	ADNR	Rehabilitation of 2.5 miles of existing access road along Big Hurrah Creek and installation of culverted road crossings in Big Hurrah and Linda Vista creeks
Temporary Water Use Authorization TWUP F2006-09	ADNR	Withdrawal of groundwater from 11 interceptor wells surrounding Rock Creek Mine Pit (pit dewatering)
Temporary Water Use Authorization TWUP F2006-10	ADNR	Withdrawal of surface water from Rock Creek drainage within the Rock Creek Mine Pit (pit dewatering)
Temporary Water Use Authorization TWUP F2006-11	ADNR	Withdrawal of surface water from a tailings pond, tailings storage facility and process plant site drainage channels for mill process water for the Rock Creek Mine Project
Temporary Water Use Authorization TWUP F2006-12	ADNR	Diversion of surface water from Rock Creek drainage diversion channels into Lindblom Creek to minimize drainage through the Rock Creek Mine Site
Temporary Water Use Authorization TWUP F2006-13	ADNR	Withdrawal of groundwater from five interceptor wells surrounding the Big Hurrah Mine Pit (pit dewatering)
Temporary Water Use Authorization TWUP F2006-14	ADNR	Withdrawal of surface water from the Little Hurrah Creek drainage within the Big Hurrah Mine Pit (pit dewatering)
Certificate of Approval to Operate a Tailings Dam AK0039	ADNR	Issued on July 7, 2008 and expires on December 31, 2009. The certificate was suspended when Rock Creek Mine went into temporary Closure/Care and Maintenance.

In addition to the permits, approvals and authorizations listed in Table 2, there are state and federal laws that must be complied with, including, but not limited to, state regulations regarding spill reporting, water quality standards, mining, reclamation and solid waste management, Resource Conservation and Recovery Act, Emergency Planning and Community Right-to-Know –Act, Toxic Substances Control Act, Clean Air Act and Clean Water Act.

This annual report has been prepared in accordance with Waste Management Permit 2003-DB0051 and Reclamation Plan Approval F20069578. The

requirements of this permit and approval are summarized in the following sections.

2.4.1 Waste Management

The Waste Management Permit was issued to Alaska Gold Company by the Alaska Department of Environmental Conservation on August 9, 2006 and is effective for five years. The permit includes the requirement to submit quarterly and annual reports and regulates the following:

- Disposal of tailings to the Tailings Storage Facility at Rock Creek Mine;
- Disposal of waste to inert solid waste landfill facilities at the Rock Creek Mine and Big Hurrah site;
- Underground injection of treated mine wastewater at Rock Creek Mine and Big Hurrah site;
- Groundwater and surface water monitoring at the Rock Creek Mine and Big Hurrah site;
- Storage of potentially acid generating (PAG) development rock prior to disposal in the pit at closure at the Big Hurrah site;
- Hazardous chemical storage and containment at the Rock Creek Mine and Big Hurrah site;
- Reclamation and closure activities at the Rock Creek Mine and Big Hurrah site;

2.4.2 Reclamation Plan Approval

The Reclamation Plan Approval for the Rock Creek Mine and Big Hurrah site was issued to Alaska Gold Company by the Alaska Department of natural Resources, Division of Mining, Land and Water, on August 9, 2006, and is effective for five years. It was issued in accordance with Alaska Statutes 27.19 (reclamation) and 38.05 (Alaska Land Act) and the Alaska Administrative Code, Title 11, Chapter 97 (mining reclamation). The approval requires quarterly and annual reporting and includes stipulations regarding the following:

- Financial assurance;
- Review of geochemical characterization and water quality data;
- Stockpiling of organic materials;
- Geochemical characterization of development rock;
- Waste rock handling;
- Fuel and hazardous substances management;
- Reclamation and mine closure;
- Environmental audits.

3 Activities at Rock Creek Mine

3.1 Mining and Milling Activities

In 2008, mining activities continued in the Main pit from the 105 meter bench to the 80 meter bench. From August through December 2008, the Walsh Zone pit was mined from the 145 meter bench to the 130 meter bench. The Walsh Zone pit is a separate pit located above the east side of the Main pit. There was no continuation of mining on the west side of the pit in 2008. Mining activities were conducted using standard drilling and blasting techniques. Both development rock and ore were mined from the Main pit and the Walsh Zone pit.

The bulk of the development rock was used in the construction of the Tailings Storage Facility (TSF), with lesser amounts used to construct and maintain haul roads and other facilities. Because all development rock was used in construction, no development rock stockpiles were constructed.

At the end of December 2008, mining activities had ceased. Ore has been stockpiled at the ore stockpile near the crusher, and at a secondary stockpile location along the east side of the causeway adjacent to the main ore stockpile.

The quantities of ore mined and milled, topsoil stockpiled, development rock removed and the volume in the pit at the end of 2008 are shown in Table 3.

Table 3: Mining and Milling Quant	ities at Roc	k Creek
Description	Units	200

Description	Units	2008	2009
Mill Production	Tons	100,000	0
Topsoil Salvaged and Stockpiled	CY	1,692,521	0
Ore Mined	Tons	733,110	0
Ore Willed	Tons 100,000 CY 1,692,521 Tons 733,110 CY 318,743 Tons 1,904,252 CY 827,936	0	
Davidonment Deels	Tons	1,904,252	0
Development Rock	CY	827,936	0
Pit Volume Below Anticipated Pit Lake Elevation at End of Year	CY	0	0

3.2 Disturbance and Reclamation

The areas disturbed and reclaimed at the Rock Creek Mine in 2008 are summarized in Table 4. The total disturbance up to December 31, 2008 is show on Figure 4.

Table 4: Areas Disturbed/Reclaimed at Rock Creek

	Area (Acres)				
Year	Wetl	ands	Uplands		
	Disturbed	Replaced	Disturbed	Reclaimed	
2007	90	0	92	0	
Cumulative – End of 2007	241	0	139		
Net – End of 2007	241		139		
2008	0	0	42	5	

3.3 Development Rock Stockpiles

Development rock from the Rock Creek Mine was used entirely for construction activities therefore no stockpiles were constructed in 2008.

3.4 Organic Stockpiles

The volumes of organic and overburden material removed and placed in Stockpiles 1 through 3 for future reclamation purposes at the Rock Creek Mine are listed in Table 5. Approximately 1,064,555 cubic meters of organic and overburden material was excavated from the footprint of the TSF in 2008 as part of Stage 2 construction of the TSF. This material was placed in Organic Stockpiles 1, 2 and 3.

Description	Unit	Stockpile #1	Stockpile #2	Stockpile #3	Total
•	S			_	
Total Capacity	m^3	1,225,000	185,000	640,000	2,050,000
Total Volume End of 2007	m^3	116,689	140,000	0	256,689
End of 2007 Capacity	m^3	1,108,311	45,000	640,000	1,793,311
Remaining	%	90%	24%	100%	87%
Volume Placed - 2008	m^3	370,793	40,962	625,793	1,037,548
Total Volume End of 2008	m^3	487,482	180,962	625,793	1,294,237
End of 2008 Capacity	m^3	737,518	4,038	14,207	755,763
Remaining	%	60%	2%	2%	37%

Table 5: Volumes of Organic Stockpiles at Rock Creek

3.5 Tailings Storage Facility

Construction of the diversion ditches and commissioning dam for the Tailings Storage Facility were completed in early 2008. Construction of the Seepage Collection System and stage 1 work continued to the end of December 2008. ADNR granted a certificate of approval dated July 7, 2008 to operate a tailings dam (AK00309) for the Rock Creek Tailings Storage Facility Dam. This approval was suspended by the State of Alaska in December 2008 when the Rock Creek Mine went into Temporary Closure/Care and Maintenance.

3.5.1 Inspections

Visual inspections of the TSF are done weekly. Mill personnel inspect the TSF for unusual conditions such as evidence of excessive deformation or cracking of the crest, sloughing or deformation of the embankment, erosion channels in the embankment slope, embankment toe erosion, water or tailings levels exceeding the maximum permitted storage volume, and excessive seepage at the embankment toe or slope. Copies of the inspection reports are included in Appendix B.

3.5.2 TSF Seepage Collection System

A seepage collection system consisting of a shallow ditch containing perforated flexible drain pipe, backfilled with drain rock was constructed at the downstream toe of the commissioning TSF. The seepage collection sumps were lined with a geosynthetic clay liner (GCL), and filled with drain rock and are or will be capped with GCL. Work was completed to its current state by December 12, 2008. Final modifications will be completed during 2009.

Water collected in the sump is conveyed by gravity to one of two collection sumps. Water from the South Sump is pumped from the sump using a 7.5 HP submersible pump through a 3" insulated and heat traced HDPE pipeline to the Main Sump. Water in the Main Sump is pumped by a 30HP electric pump through a 6" heated and heat traced HDPE pipeline over the top of the TSF back into the basin.

TSF seepage collection flow rate data is monitored on a daily basis in accordance with the 2008 Rock Creek monitoring plan. Figure 5 shows the decreasing trend in seepage rates for 2008. Daily flow rate data collected from weirs during seepage collection system construction and from permanently installed totalizers are included in Appendix C.

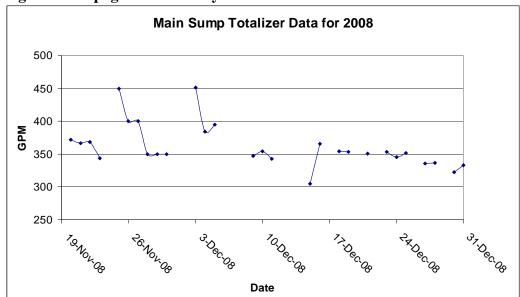


Figure 5: Seepage Collection System flow rate data

3.6 Recycle Water Pond

The recycle water pond captures runoff from the plant site and the decant water from the TSF. Water contained in the recycle water pond is tested for WAD cyanide and total cyanide. The acceptable leak rate design criterion for the leak collection recovery system (LCRS) installed between the primary and secondary liners of the mill recycle water pond is 492 gallons per day. The interstitial volume pumped is monitored on a daily basis recording the flow meter reading. Flow rate data is tabulated and included in Appendix D. The RWP is also monitored daily with a visual inspection. Copies of RWP visual inspections are included in Appendix B.

Construction of the Recycle Water Pond (RWP), which began in 2007, was completed in August. Construction activities focused on; completion of the geomembrane liner installation, inspections and testing of the installed geomembrane, and monitoring of the Leak Collection and Recovery System (LCRS). In late January, the geomembrane liner installation was completed but due to weather and site conditions a complete inspection and acceptance was not possible. In May it became evident that damage to the geomembrane had occurred and repair activities commenced. These activities consisted of removing sediment from the pond, repairing the damaged geomembrane, installing a new secondary geomembrane across the bottom of the pond up to the 123-foot elevation, and installing a new geonet layer and primary geomembrane across the bottom of the pond and up the side slopes to the pond crest. Complete inspections were performed on these new geomembrane layers in addition to hydro-tests on both. Final acceptance was issued when the LCRS consistently reported negligible water during a 24-hour period (29 gallons).

3.7 Treated Wastewater Injection

The Rock Mine waste water injection system and associated water treatment plant will be commissioned in February 2009. The water treatment plant will employ a ferrous sulfate treatment process to treat naturally occurring elevated metals. Once the treated wastewater injection system is operational, the quantities of wastewater discharged to the injection wells will be reported. No wastewater was treated or injected in 2008.

Alaska Gold's WTP receives water from tailings ponds. Treated water from the WTP will be re-injected into nearby reinjection wells in accordance with requirements outline in the WMP Permit Number 2003-DB0051.

3.8 Solid Waste Landfill

There was no solid waste landfill in operation in 2008 at Rock Creek Mine. Inert and putrescible wastes were placed in containers and subsequently removed from the site by a waste management contractor.

3.9 Waste Management

The materials disposed during the year at the waste management facilities at the Rock Creek Mine are listed in Table 6. As shown, 100,000 tons of paste tails were placed in the Tailings Storage Facility. All development rock was used for construction materials (roads, causeways, TSF). Solid wastes were removed from site by a waste management contractor.

Location **Material Ouantity Units Tailings Storage Facility** Paste tailings 100,000 tons 0 Development Rock None N/A Stockpile 0 Inert Solid Waste Landfill None N/A

Table 6: Materials Disposed at Waste Management Facilities at Rock Creek

3.10 Storm Water Management

In May of 2008 AGC completed revisions to the CGP-SWPPP in response to comments from ADEC and implemented a priority-based, tiered approach to addressing storm water issues at the site. AGC identified twelve high priority areas for action, and has been focused on addressing storm water controls in these areas during 2008. Figure 6 shows the completed SWPPP structures at the end of 2008.

AGC continued the development and implementation of site-specific storm water practices to address runoff during construction and operation at the mine site. These activities included continuing implementation and refinement of the CGP SWPPP and implementation of a two tiered approach as part of revisions to the CGP SWPPP for construction. Tier 1 Storm water facilities were constructed in early 2008 to address as a priority snow melt conditions and provide additional control of sediment in storm water discharging from the mine site. These tier 1 facilities were designed to be constructed under the limited available time and under the prevailing winter conditions at the site. As part of the transition to the MSGP-2000 storm water regulation planned for late 2008, AGC concurrently commissioned the site engineering design consultant to prepare engineering plans for Tier II Storm water controls.

The scope for Tier II included installation of a permanent rundown structure and an additional sediment basin for DC-1. The existing 4,850 linear feet of constructed diversion channel was armored, contoured and stabilized per design. Also included in Tier II was the stabilization of unstable slopes and construction of the southern section of DC-1, approximately 4,650 linear feet. From Lindblom Creek to Rock Creek interception, the final contouring/tracking of the ditch was completed and hydroseeded. Approximately 1,125 linear feet of DC-1 has been lined with rip rap; three permanent check dams were installed in DC-1. The recommissioning of DC-1 was completed on September 18, 2008.

Work on DC-2 included a permanent rundown structure constructed at the outfall of DC-2. The existing 4,110 linear feet of constructed diversion channel was contoured and stabilized. A new sediment basin was constructed to improve the

BMP for DC-2. An outfall was constructed, lined and armored to handle higher water flow during breakup.

Work on DC-3 included installing a permanent rundown structure and construction of Diversion channel 3 which is 8,400 linear feet. Construction included final contouring/tracking, armoring of the ditch as well addition of check dams. The lower portion of DC-3 along the seepage collection system will be lined with HDPE liner in the spring.

3.11 Reportable Spills

There were 22 reportable spills at the Rock Creek Mine in 2008, as shown in Table 7. The substances spilled were related to construction and mining activities and included fuel, hydraulic oil, transmission fluid, heating oil, used oil, and MIBC in quantities ranging from 0.5 gallons to 100 gallons. All spills were reported and cleaned up immediately in accordance with applicable regulations. Corrective actions were taken as appropriate to minimize the reoccurrence of spills.

Table 7: Reportable Spill summary

Product Spilled	Date of Spill	Potential Responsible Party	Location	Quantity Spilled	Units	Course of Smill
						Cause of Spill
Diesel Fuel	01/04/08	Alaska Mechanical	Rock Creek Mine		gallons	Nozzel would not shut off while fueling truck
	04/15/08	Alaska Gold Company	Rock Creek Mine		gallons	Punctured fuel line
Hydraulic Fluid	02/29/08	Alaska Gold Company	Rock Creek Mine pit		gallons	Hydraulic Line Failure
	03/04/08	Alaska Gold Company	Rock Creek Mine Dam	0.5	gallons	Hydraulic fluid
			Dam Keyway			
	03/05/08	Alaska Gold Company	Rock Creek Mine		gallons	Hydraulic O ring Failure
	03/19/08	Alaska Gold Company	Rock Creek Mine		gallons	Hydraulic Line failure
	04/02/08	Alaska Gold Company	Rock Creek Mine	3.5	gallons	Hydraulic Line failure
	05/29/08	Alaska Gold Company	Rock Creek Mine	3	gallons	Hydraulic Line broken
			Thickner			
	06/26/08	Alaska Gold Company	Rock Creek Mine	60	gallons	Hydraulic hose failure
	07/16/08	Alaska Gold Company	Rock Creek Mine	20	gallons	Haul truck hose failure
	10/31/08	Alaska Gold Company	Rock Creek TSF	40	gallons	Hydraulic drain cap broke
Used Oil	06/02/08	Alaska Gold Company	Rock Creek Mine	20	gallons	Used Oil
Engine Oil	02/27/08	Alaska Gold Company	Rock Creek Mine	5	gallons	engine leak portable air
						compressor
	03/04/08	Alaska Gold Company	Rock Creek Mine	1.5	quarts	oil filter leaking
	03/18/08	Alaska Gold Company	Rock Creek Mine	44	gallons	Lube line split on crusher
	04/16/08	Alaska Gold Company	Rock Crek Mine	2	gallons	leak from fork lift
	06/29/08	Alaska Gold Company	Rock Creek Mine	3	gallons	55 gallon drum tipped
Heating Fuel	06/01/08	Alaska Gold Company	Rock Creek Mine	100	gallons	Fuel tank toppled over
_			Crusher			
MIBC	10/16/08	Alaska Gold Company	Satellite Field	5	gallons	Leaky container inside conex
Hydraulic Oil	05/26/08	Alaska Gold Company	Rock Creek Mine	50	gallons	Hydraulic line came apart from fitting
,		1	Crusher		-	
	08/08/08	Alaska Gold Company	Rock Creek Mine	20	gallons	992D blew hydraulic hose
		1	95 level Pit			
	01/15/08	Alaska Gold Company	Rock Creek Mine	2	gallons	Hydraulic line failed on EX1100
		1	Tailings Dam		-	

3.12 Updates to Plan of Operations

There were no updates to the Plan of Operations in 2008. A review of the mine plan will be carried out by AGC in early to mid 2009. Any resulting updates to the Plan of Operations will be submitted to the appropriate agencies for review

and approval. Rock Creek Mine was put into care and maintenance in early December and is operating under the Temporary Closure/Care and Maintenance Plan updated and presented to the State in December 2008.

4 Activities at Big Hurrah

4.1 Summary of Activities

Three groundwater wells were constructed to test their potential for use as future dewatering wells. Two additional observation wells were drilled in order to observe water levels during the dewatering well tests. Drilling and construction of these wells occurred on previously disturbed ground and no drill pad construction was required. In 2008 there was no mining activity at Big Hurrah. Table 8 summarizes the mining activity at Big Hurrah in 2008.

Table 8: Mining and Milling Quantities at Big Hurrah

Description	Units	2008
Mill Production	Tons	0
Topsoil Salvaged and Stockpiled	CY	0
Ore Mined	Tons	0
Ore Willed	CY	0
Non DAC Davidonment Book	Tons	0
Non-PAG Development Rock	CY	0
DAG Davelenment Book	Tons	0
PAG Development Rock	CY	0
Pit Volume Below Anticipated Pit Lake Elevation at End of Year	CY	0

4.2 Disturbance and Reclamation

No new disturbance or reclamation activities were completed at the Big Hurrah site in 2008.

4.3 Development Rock Stockpiles

No development rock was removed from the Big Hurrah site in 2008.

4.4 Organics Stockpiles

There were no organics stockpiles constructed at the Big Hurrah site in 2008.

4.5 Treated Wastewater Injection

The treated wastewater injection system at the Big Hurrah site remains to be designed and permitted. Once the treated wastewater injection is operational, the quantities of wastewater discharged to the injection wells will be reported.

4.6 Waste Management

The materials disposed during the year at the waste management facilities at the Big Hurrah site are listed in Table 9. As shown, no wastes were placed in the facilities regulated under the Waste Management Permit in 2008 at the Big Hurrah site.

Table 9: Materials Disposed at Waste Management Facilities at Big Hurrah

Location	Material	Quantity	Units
Non-PAG Development Rock Stockpile	None	0	N/A
PAG Development Rock Stockpile	None	0	N/A
Backfill of Satellite Pit	None	0	N/A
Inert Solid Waste Landfill	None	0	N/A

4.7 Reportable Spills

No spills were reported to occur at the Big Hurrah site in 2008.

4.8 Updates to Plan of Operations

There were no updates to the Plan of Operations in 2008. A review of the mine plan, including the development of the Big Hurrah site, will be carried out by

AGC in mid to late 2009. Any resulting updates to the Plan of Operations will be submitted to the appropriate agencies for review and approval.

5 Monitoring

The Waste Management permit requires monitoring of surface water, groundwater, seepage, treated wastewater, development rock, tailings, recycle water, wildlife and regulated facilities. The monitoring activities conducted in 2008 are summarized in the following sections.

5.1 Visual Monitoring

Daily and weekly visual monitoring was conducted on the Rock Creek Mine facilities regulated under the Waste Management permit 2003-DB0051. Monitoring of erosion control structures and diversion structures was conducted in accordance with SWPPP. Visual inspections were completed by ERC and reported to AGC during daily SWPPP construction meetings. ERC was the oversight consultant for SWPPP construction. Copies of the daily inspection and activities reports are included in Appendix E.

5.2 Surface Water Monitoring

During open flow surface water was sampled on a monthly basis at Rock Creek and Big Hurrah. Analysis include total and dissolved metals, total dissolved solids, total suspended solids, alkalinity, pH, conductivity, sulfate, chloride, fluoride, mercury, cyanide (total and WAD), ammonia, nitrite, nitrate and phosphorous.

5.2.1 Surface Water Monitoring at Rock Creek Mine

Surface water is monitored at 7 locations on and around the Rock Creek Mine site. Table 10 lists the surface water sample locations for Rock Creek. Water chemistry results for 2008 Rock Creek surface water sampling is located in Appendix F.

Table 10: Surface Water sampling locations at Rock Creek

Sample ID	Location	Description
SABC	Snake River above Balto Creek	Snake River above mine site
LINB	Lindblom Creek	At culvert at road crossing

ROCK 2	Rock Creek	West side of main road below culvert
ROCK	Rock Creek	Rock Creek below diversion ditch 1 and
1a	ROCK CIEEK	above pit
ROCK	Rock Creek	Rock Creek below diversion ditch 1 and
1b	ROCK Creek	above pit
ROCK	Rock Creek/Albion	Unner Dealt Cheek shows Dit
TB	Tributary	Upper Rock Creek above Pit
GLAC	Glacier Creek	Above gravel trail crossing above bridge

Surface water quality is monitored within the storm water management system during the non-winter months. Twenty four surface water sample stations are maintained and sampled everyday for turbidity. Any exceedence of the five NTU drinking water standard must be reported to the ADEC. This data is compiled monthly and reported to EPA Region 10 for compliance under SWPPP. The 2008 turbidity results are included in Appendix G.

5.2.2 Surface Water Monitoring at Big Hurrah

Surface water is monitored at 6 locations on and around the Big Hurrah site. Table 11 lists the surface water sample locations for Big Hurrah. Water chemistry results for 2008 Big Hurrah surface water sampling is located in Appendix F.

Table 11: Surface Water sampling Locations at Big Hurrah

Sample ID	Location	Description
BHBL	Lower Big Hurrah	Big Hurrah Creek below mine site
	Creek	
BHRU	Upper Big Hurrah	Big Hurrah Creek above mine site
	Creek	
HUFF	Huff Creek	Huff Creek tributary to Big Hurrah Creek
		above mine site
LHRL	Lower Little Hurrah	Mouth of Little Hurrah Creek below proposed
	Creek	pit
LHRU	Upper Little Hurrah	Little Hurrah Creek above proposed pit
	Creek	
LIDA	Linda Vista Creek	Linda Vista Creek tributary to Big Hurrah
		below mine site

5.3 Groundwater Monitoring

Ground water is monitored according to the 2008 Rock Creek Monitoring Plan (QAPP, Appendix A). Ground water samples were collected from monitoring wells on a quarterly basis. Analysis included total and dissolved metals, total dissolved solids, total suspended solids, alkalinity, pH, conductivity, sulfate, sulfide, chloride, fluoride, mercury, cyanide (total and WAD), ammonia, nitrite, nitrate and phosphorous.

5.3.1 Groundwater Monitoring at Rock Creek Mine

Groundwater monitoring continued in 2008 at Rock Creek Mine. Analysis included total and dissolved metals, total dissolved solids, total suspended solids, alkalinity, anions, mercury, cyanide, ammonia, and phosphorous. Table 12 lists the ground water sample locations for Rock Creek. The associated lab reports and water chemistry databases are included in Appendix F.

Table 12: Groundwater Sample locations at Rock Creek

Well Sample ID	Location	Description
MW03-05	Above Rock Creek Culvert	Background Monitoring Well
MW06-8a,b	South TSF dam/South of south sump	TSF Monitoring Well
MW06-9a,b	West TSF dam/West of main sump	TSF Monitoring Well
MW06-10a,b	Between North TSF and Rock Creek	TSF Monitoring Well
MW07-11	South of Injection Well Field	Down gradient of Injection Well Field
MW08-14a,b	South of Recycle Water Pond	Down gradient of Recycle Water Pond
MW08-15	South of Injection Well Field	Down gradient of Injection Well Field

5.3.2 Groundwater Monitoring at Big Hurrah

No groundwater monitoring was conducted at Big Hurrah during the 2008 season.

5.4 Seepage Monitoring

AGC monitors the TSF and Seepage Collection System. This includes visual monitoring on a daily basis of the TSF, sumps and dam, daily measurements of the TSF elevation, groundwater monitoring well elevations and seepage collection flow rates.

Development rock dumps have not been constructed at Rock Creek Mine in 2008 so seepage monitoring of these facilities was performed in 2008.

5.5 Wastewater Injection System

Alaska Gold Company has authorization from EPA Region 10 to commence Class V injection activities on 15 wells; Exploratory Pilot Hole # 1, 2, 3, 5, 7, 22, 23, 24, 25, 27, 28, 29, 30, 31 and 32. Table 13 shows the test results of these 15 exploratory pilot holes.

Table 13: Injection Well exploratory test results

Table X-1					
Injection Pilot Hole Test Results					
				Estimated	
				Injection Rate	
		Depth of	Hydraulic	with maximum	
	Date of test	Well	Conductivity	pressure	
Hole					
#		(feet)	(ft/day)	(gpm)	
#1	8/21/2007	180	0.73	34	
# 2	8/21/2007	170	7.35	77	
#3	8/21/2007	170	1.08	23	
# 5	10/14/2006	170	3.74	28	
# 7	10/16/2006	340	5.87	34	
#22	6/27/2008	210	2.16	36.8	
#23	6/28/2008	180	1.00	34.9	
#24	6/28/2008	169	5.06	159.7	
#25	6/29/2008	150	2.58	81.1	
#27	6/29/2008	190	2.43	72.9	
#28	6/27/2008	160	1.33	42.1	
#29	6/29/2008	170	4.14	100.6	
#30	6/30/2008	180	2.31	148.1	
#31	6/29/2008	160	5.86	179.5	
#32	6/30/2008	210	1.04	18.0	
Total estimated injectable rate using proposed					
	locations (gpm) 1070				

In 2008, three contractors were involved with the construction of the injection well system. AIC placed the pipeline, AMI were responsible for the heat trace and T&D Services constructed the connections, between the wells and the pipeline, designed by RTW.

5.6 Cyanide Monitoring

Monitoring of WAD cyanide is required on a daily basis for the tailings slurry water (post treatment) and water from the Recycle Water Pond Recirculation Loop. Monitoring is completed in accordance with the Rock Creek Mine Monitoring Plan.

5.6.1 Cyanide Monitoring of Tailings

The tailings slurry water is monitored for WAD cyanide levels after treatment (between the mill and thickener) on a daily basis as required in the Rock Creek

Monitoring Plan. Monitoring of the tailings for WAD cyanide was conducted after cyanide was introduced to the process on October 5, 2008 and only when tailings were deposited to the TSF. Table 14 shows the WAD cyanide results during times of tailings deposition.

Table 14: Paste tailings WAD cyanide results

	Time		WAD CN
Date	(24-hr)	Location	(ppm)
10/5/2008	16:58	Cyanide Destruction Tank Discharge	8.0
10/6/2008	5:30	Cyanide Destruction Tank Discharge	9.5
10/6/2008		Cyanide Destruction Tank Discharge	6.0
10/7/2008	5:30	Cyanide Destruction Tank Discharge	9.0
10/7/2008	22:00	Thickener Underflow to TSF	6.0
10/8/2008	12:01	Thickener Underflow to TSF	9.0
10/8/2008	6:30	Thickener Underflow to TSF	12.0
10/9/2008	7:00	Thickener Underflow to TSF	8.5
11/15/2008	18:10	Thickener Underflow to TSF	2.5
11/16/2008	18:00	Thickener Underflow to TSF	1.0

5.7 Geochemical Monitoring

Geochemical monitoring of composite samples of waste development rock and ore are completed as described in the 2008 Rock Creek Monitoring Plan. Analytical results of all completed geochemical sampling are included in Appendix H. All of the 2008 data was not available at the time of this report.

5.7.1 Geochemical Monitoring at Rock Creek Mine

Geochemical monitoring of development rock at Rock Creek is conducted on composites from blasthole cuttings of every 10th blasthole at the Rock Creek Mine. Table 15 shows the required analyses and frequency of sampling as listed in the Monitoring Plan.

Table 15: Development Rock Monitoring at Rock Creek

Analyte	Method	Frequency
In-house Analyses		
Paste pH	Standard	
Carbon/Sulfer (total)	Leco	Weekly composite fo every 10th blasthole
NP/AP ratio	Standard Sobek	
Outside Lab Analyses		
Paste pH	Standard	
Carbon/Sulfer (total)	Leco	
NP/AP ratio	Standard Sobek	Split of one weekly composite (from above) analyzed
CaNP	TIC	monthly
Siderite corrected NP	Modified Sobek	
Bulk rock chemistry	ICP/MS	
MWMP	NDEP	Quarterly composite of weekly blasthole composite
		Humidity cell tests may be required by ADEC if
Humidity Call Toot	ASTM or other	geochemistry analyses indicate that the development
Humidity Cell Test	approved method	rock may have the potential to produce acid and/or
		leach metals.

In 2008, acid-base accounting samples were prepped and analyzed at several different labs. From January 2008 through July 2008 all sample prep work was completed by Alaska Assay Labs in Fairbanks, AK and the sample was submitted to ACME labs in Vancouver, BC for ABA analyses. In mid-July 2008 sample prep work was competed by the Rock Creek Mine assay lab. From January 2008 through April 2008 all ABA analytical work was completed by ACME labs in Vancouver, BC, Canada. From May 2008 onward all ABA analytical work was completed by CanTest labs in Burnaby, BC, Canada.

5.7.2 Geochemical Monitoring at Big Hurrah

There was no development rock removed at the Big Hurrah site in 2008, therefore no results of geochemical monitoring are presented in this report.

5.7.3 Monitoring of Tailings at Big Hurrah

No Tailings were produced at Big Hurrah during 2008; therefore no monitoring results are presented in this report.

5.8 Wildlife Monitoring

Numerous wildlife observations were made in 2008, including reindeer, moose, fox, bear and muskoxen. There were no reported mortalities in 2008. Hazing was required on occasion and included the use of shotgun blasts. The current policy is to contact the Security Office when wildlife is observed. An up to date wildlife monitoring map is located in the Rock Creek Mine administrative office showing the location of all reported animal sightings within the mine site.

6 Care and Maintenance Rock Creek Mine

On November 24, 2008 the decision was made to suspend operations at the Rock Creek Mine outside of Nome Alaska and enter into a period of Care and Maintenance. The C& M budget for December 2008 and all of 2009 is expected to be between 6 and 7 million dollars. Of which the largest component is the cost of electricity at \$1.0mm. After G&A, the second largest component is labor at \$1.7mm. Included in the C&M budget is the operating cost of the water treatment plant (WPT) which will be commissioned in mid February 2009.

The most significant cause of the operation being placed into C&M was the primary crushing system's inability to provide sufficient amounts of 155mm-crushed material to the secondary crusher. In, particular, the system was designed with a vibrating feeder supplying material to a scalping grizzly and oversized jaw crusher. When moving dry, angular, run of mine (ROM), the vibrating feeder performed reasonably, however, with wet or "sticky" material the feeder would plug up causing significant down time to chip out the feeder. Care and Maintenance activities are outlined in the Temporary Closure Plan for Rock Creek Mine.

6.1 Temporary Closure Plan

Section 1.11.2 of the Waste Management Permit (WMP) provides that AGC shall submit a temporary closure plan to the Alaska Department of Environmental Conservation (ADEC). The Temporary Closure Plan addresses (1) procedures, methods, and schedule to be implemented for the Treatment, disposal, and/or storage of water; (2) the control of surface and groundwater drainage to and from the facility and surrounding area; (3) the control of erosion from the TSF and inert solid waste landfill facilities; and (4) the secure storage of chemicals during the period of closure.

6.2 Overview of Temporary Closure Plan Strategy

A transition period is required to prepare the site for longer term Care and Maintenance. The Transition Period is the period from which mine operations were suspended and where the site will complete material movement to winterize seepage collection systems, winterize mobile equipment, buildings and other site infrastructure. The Care and Maintenance Program is the program where a reduced workforce will ensure property assets are inspected and maintained, access to mine site locations is controlled, chemical and explosive storage is inspected and the site Water Management Strategy (WMS) is implemented.

During the period of Temporary Closure Care and Maintenance, environmental monitoring will continue as described in the Rock Creek Environmental Monitoring Plan consistent with applicable permit requirements. Existing storm water controls and BMPs will likewise be maintained to insure compliance with the Clean Water Act. All reagents and explosives have been safely secured in locked shipping containers and their locations identifies. Reagents required for operation of the wastewater treatment plant are located on site and stored in a lined reagent storage.

Staffing levels at the Rock Creek Mine will be maintained at about 14 employees to implement this plan. Manpower levels reflect those resources necessary to undertake the care and maintenance of existing facilities, to complete required monitoring actions, and to comply with all other permit requirements.

7 Financial Responsibility

AGC posted a Reclamation Bond in the amount of \$6,844,700, which is backed by an Irrevocable Standby Letter of Credit between AGC and the Wells Fargo Bank. The current Reclamation Bond amount of \$6,844,700 was approved by the agencies in 2007 as sufficient for reclamation purposes based on the closure and long-term monitoring cost estimate after the final closure of both the Rock Creek and Big Hurrah sites

As part of the annual financial review conducted by NovaGold, AGC has clarified in responses to inquiries from the State that the entire bond amount remains available for Rock Mine. No significant changes to mine operation or mine size have occurred at this time even though Rock Creek Mine is in Temporary Closure/Care and Maintenance. Reclamation costs will be revisited and updated when Rock Creek Mine moves from Care and Maintenance status to startup as discussed in the January 23, 2009 meeting with the State agencies.

8 References

SRK 2008 Inc. April 2008	Rock Creek Groundwater Baseline Review, SRK Consulting (US)
SRK 2008	ADEC and ADNR Annual Report 2007, Rock Creek and Big Hurrah Mines May 2008
SRK 2008	Rock Creek Mine and Big Hurrah Project Nome, Alaska Monitoring Plan, SRK Consulting (U.S.), Inc. November 2008

9 Abbreviations

ABA Acid Base Accounting

ADEC Alaska Department of Environmental Conservation

ADNR Alaska Department of Natural Resources

AGC Alaska Gold Company

AIC Alaska Interstate Construction

AK Alaska

AMI Alaska Mechanical Inc. BMP Best Management Practice

CIL Carbon In Leach

CGP Construction General Permit

CN Cyanide
CY Cubic Yards
Discouries Characteristics

DC Diversion Channel

EPA Environmental Protection Agency ERC Ecological Resource Consultants, Inc.

HDPE High Density Polyethylene

LCRS Leak Collection Recovery System

MIBC Methyl Isobutyl Carbinol
MSGP Multi Sector General Permit

MWMP Meteoric Water Mobility Procedure

N/A Not Applicable

NTU Nephelitic Turbidity Unit
PAG Potential Acid Generating
OAPP Quality Assurance Project Plan

SWPPP Storm Water Pollution Prevention Plan

TSF Tailings Storage Facility
TWUP Temporary Water Use Permit
WAD Weak Acid Dissociable

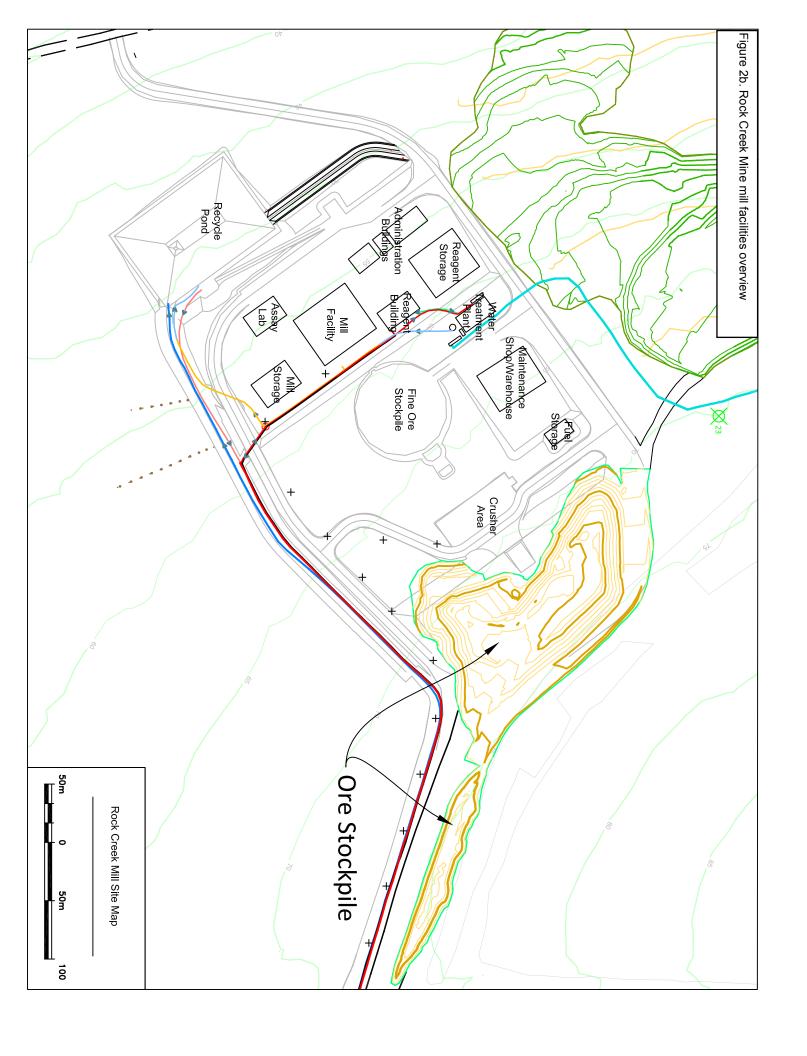
WMP Waste Management Permit
WPT Water Treatment Plant

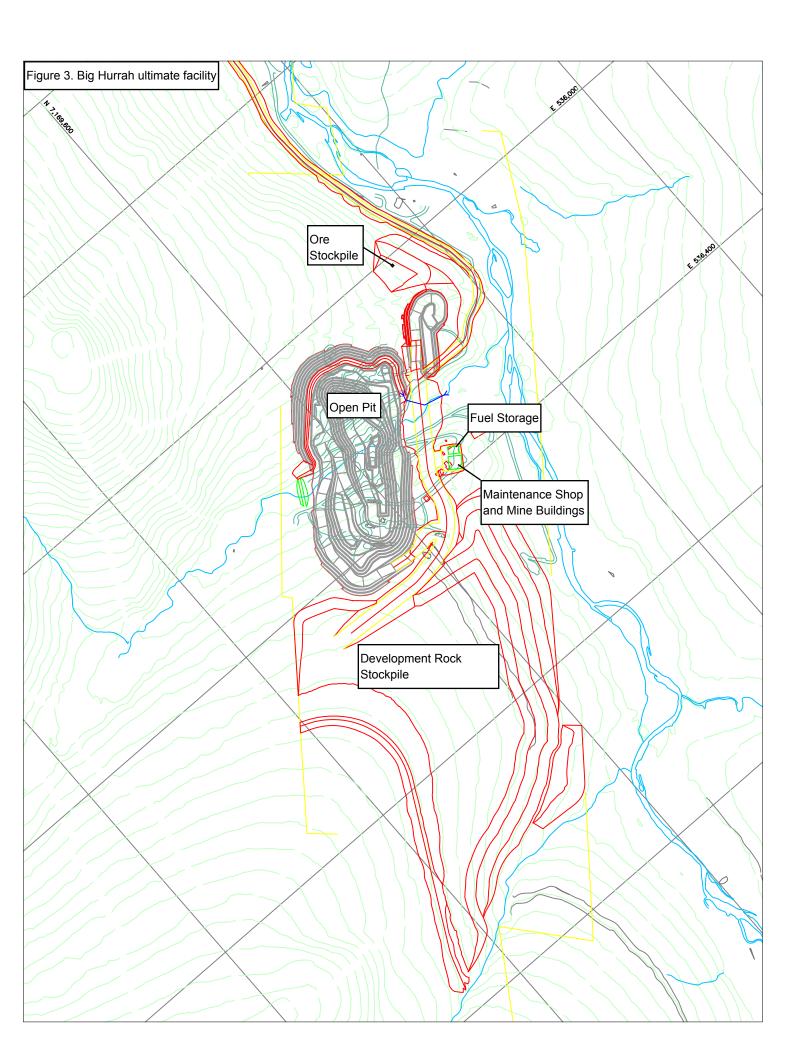
UIC Underground Injection Control

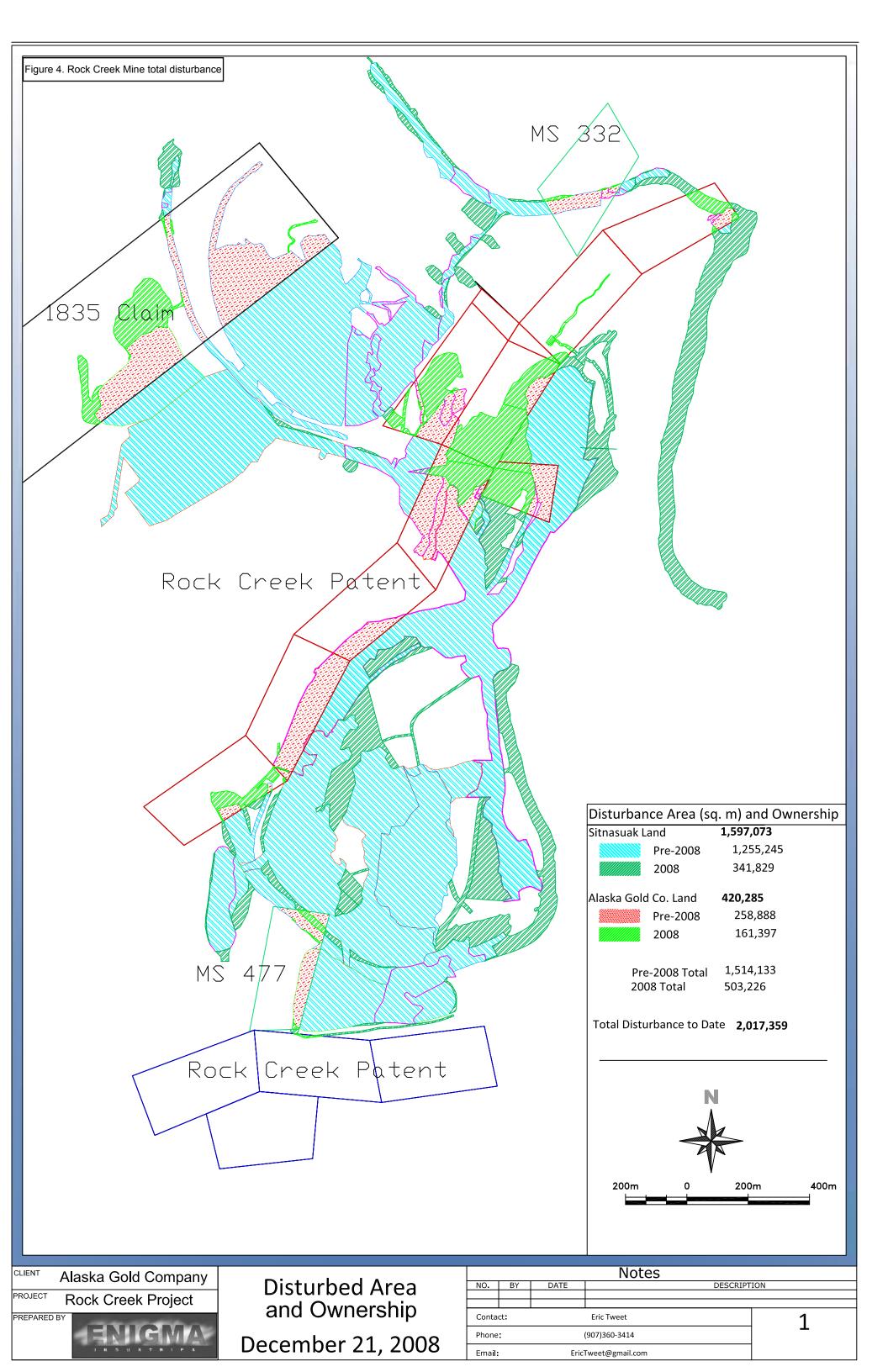
Appendix A

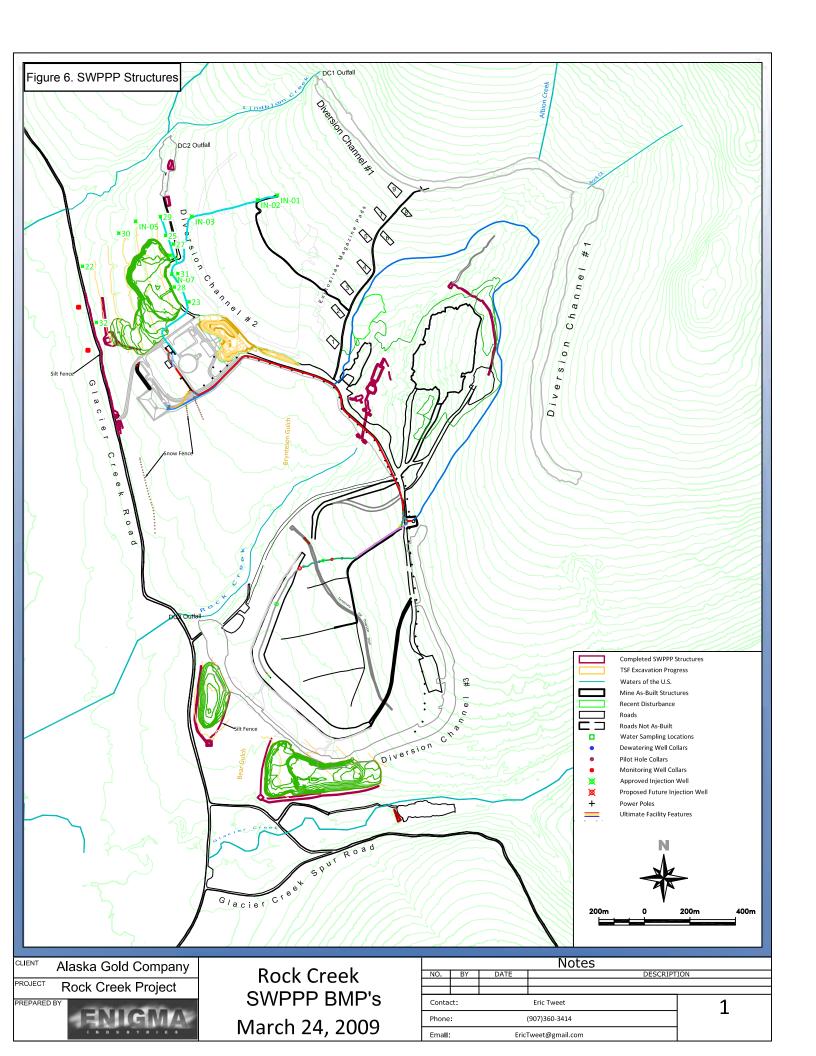
Figures











Appendix B

TSF and RWP weekly visual inspection reports

Data is located on included DVD

Appendix C

Seepage collection flow rate data

				Main Sump Flo	ow Data
Date	Time	Instantaneous Flow (gpm)	Totalizer Reading (X100)	Calculated GPM	Comments
19-Nov-08	4:20	400	60497		instantaneous between 380-420
20-Nov-08	12:45	475	64957	372	instantaneous between 470-490
21-Nov-08	12:45	475	70181	367	
22-Nov-08	1:45	525	75760	368	500-540 and hose wasn't sinced as tight as before
23-Nov-08	7am?	n/a	78258	344	pump stopped early morning sometime, day crew saw it at 8 am, started back up at 2 pm
24-Nov-08	13:00	n/a	n/a		Pump maintenance.
25-Nov-08	12:45	n/a	n/a	450	New lift being installed, Increase flow. Pump on high to bring sump level back down.
26-Nov-08	13:00	n/a	n/a	400	New lift being installed, lines were being moved.
27-Nov-08	13:00	n/a	n/a	400	New lift being installed, lines were being moved.
28-Nov-08	13:45	n/a	n/a	350	New lift being installed, lines were being moved.
29-Nov-08	14:00	n/a	n/a	350	Lines being installed
30-Nov-08	12:15			350	Lines being installed
1-Dec-08					installed eletrical pump
2-Dec-08	18:25	525 ?	78258		Pump finally got finished. Hard line still needs to be hooked up.
3-Dec-08	11:10	405	82866	451	checked at 11
4-Dec-08	2:00	n/a	88173	384	pump off between 12 and 2p.m. turned back on at 2:15p.m.
5-Dec-08	14:30	330	93986	395	instantaneous btw 320 and 340
6-Dec-08					No readings taken
7-Dec-08					No readings taken
8-Dec-08	16:15	380	109676		Calculated GPM not calculated because of missing days
9-Dec-08	14:00	440	114201	347	Sump culvert raised 6' for winter, hard line/heat trace complete
10-Dec-08	16:00	520	119716	354	
11-Dec-08	14:40	740	124377	343	
12-Dec-08					No readings taken due to severe weather conditions
13-Dec-08					No readings taken
14-Dec-08					No readings taken
15-Dec-08	14:30	380	144621	305	Calculated GPM averaged over 3 days with no data collected
16-Dec-08	14:40	380	149933	366	
17-Dec-08					no access
18-Dec-08	14:25	360	160062	354	
19-Dec-08	11:55	350	164617	353	Instantaneous fluctuating between 340 and 360gpm
20-Dec-08			_	_	No readings taken

	Main Sump Flow Data										
Date	Time	Instantaneous Flow (gpm)	Totalizer Reading (X100)	Calculated GPM	Comments						
22-Dec-08					Severe weather, no access						
23-Dec-08	13:10	380	185146	353							
24-Dec-08	13:15	360	190136	345							
25-Dec-08	16:00	520	195786	352							
26-Dec-08					Severe weather, no access						
27-Dec-08	15:30	440	205357	336	snow drifting over top of vertical sump culvert						
28-Dec-08	10:30	520	209202	337							
29-Dec-08					no readings taken						
30-Dec-08	17:30	600	220208	322							
31-Dec-08	13:15	500	224155	333	Instantaneous fluctuation around 500 gpm						

	Mair	n Sump		Total TSF	
Date	North Weir	South Weir	South Sump	Seepage	Notes
	gpm	gpm	gpm	gpm	
30-Sep-08	98	98	40	236	
1-Oct-08	178	35	35	248	
2-Oct-08	178	35	50	263	
3-Oct-08	178	20	60	258	
4-Oct-08	178	35	60	273	
5-Oct-08	178	34	65	277	
					Excavation taking place, no weirs installed
10-Oct-08	iced	50	40	90	cold
11-Oct-08	iced	35	75	110	cold
					Excavation taking place, no weirs installed
16-Oct-08			60	60	Excavation taking place, no weirs installed
					Excavation taking place, no weirs installed
27-Oct-08	excavation	excavation	30	30	Excavation taking place, no weirs installed
28-Oct-08	136	98	35	269	•
29-Oct-08	90	120	25	235	
30-Oct-08	90	90	25	205	
31-Oct-08	136	50	30	216	
1-Nov-08	136	98	20	254	
2-Nov-08	140	100	15	255	
3-Nov-08	160	98	15	273	estimation on southern weir, no data on south sump
4-Nov-08	160	98	15	273	estimation on southern weir, no data on south sump
5-Nov-08	178	98	15	291	estimation on southern weir, no data on south sump
6-Nov-08	138	138	15	291	estimation on southern weir, no data on south sump
7-Nov-08					no data, installation of new weirs in progress
8-Nov-08	136	98	15	249	new weirs in place, estimation on souther weir
9-Nov-08	157	81	15	253	estimation on southern weir
10-Nov-08	136	98		234	no data on south sump
11-Nov-08	157	98		255	no data on south sump
12-Nov-08	178	98		276	no data on south sump
13-Nov-08	178	98		276	no data on south sump
14-Nov-08	178	98		276	no data on south sump
15-Nov-08	98	98		196	no data on south sump

Appendix D

RWP flow rate data

									RPW-1 Total Gallons	RPW-2 Total Gallons
	te a	ion	ion						alle	alle
	ion ste	/ati	/ati	on					9	9
	ect Sy	elevation.	<u>je</u>	'ati	A	В	st		ota	ota
	Leak Collection Recovery System (LCRS) daily rate	#1 e	#2 elevation	Pond elevation	MW08-14A	MW08-14B	Crest	Toe	Ĕ	Ĕ
40	s C ove 3S)	# /	# >	d e	-80	-80) c		V-1	V-2
Date	ec sak	RPW	RPW	on(M	M	RWP	RWP.	P	∑ S
1-Sep-08	5	48	64	140	70	118	153.0	118.5	1631100	3160900
2-Sep-08	5	68	85	140	85	118	153.0	118.5	1631100	3160900
3-Sep-08	5	76	93	140	92	118	153.0	118.5	1631100	3160900
4-Sep-08	5	51	68	140	88	118	153.0	118.5	1631100	3192600
5-Sep-08	5	51	68	140	118	88	153.0	118.5	1631100	3222700
6-Sep-08	5	73	90	140	93	118	153.0	118.5	1631100	3252900
7-Sep-08	5	69	86	140	96	117	153.0	118.5	1631100	3259700
8-Sep-08	5	83	100	140	100	118	153.0	118.5	1631100	3275100
9-Sep-08	5	88	105	140	105	117	153.0	118.5	1631100	3275100
10-Sep-08	5	92	109	141	109	118	153.0	118.5	1631100	3275100
11-Sep-08	3	95	112	141	111	117	153.0	118.5	1631100	3275100
12-Sep-08	0	97	114	140	113	118	153.0	118.5	1631100	3275100
13-Sep-08	2	100	116	138	115	118	153.0	118.5	1631100	3275100
14-Sep-08	0	100	116	138	115	117	153.0	118.5	1631100	3275100
15-Sep-08	0	103	119	138	118	117	153.0	118.5	1631100	3275100
16-Sep-08	5	102	119	139	118	117	153.0	118.5	1631100	327500
17-Sep-08	3	106	123	139	120	118	153.0	118.5	1631100	327100
18-Sep-08	2	107	124	140	121	120	153.0	118.5	1631100	3275100
19-Sep-08	37	107	124	138	122	121	153.0	118.5	1631100	3275100
20-Sep-08	122	86	102	136	120	121	153.0	118.5	1631100	3272500
21-Sep-08	100	106	123	133	122	121	153.0	118.5	1631100	3272500
22-Sep-08	100	77	94	132	113	122	153.0	118.5	1631100	3307300
23-Sep-08	135	72	89	131	109	121	153.0	118.5	1631100	3344500
24-Sep-08	70	95	111	136	115	121	153.0	118.5	1631100	3362400
25-Sep-08	100	104	121	136	119	121	153.0	118.5	1631100	3362400
26-Sep-08	200	106	123	137	121	122	153.0	118.5	1631100	3362400
27-Sep-08	250	107	124	137	122	122	153.0	118.5	1631100	3362400
28-Sep-08	500	109	125	135	123	123	153.0	118.5	1631100	3362400
29-Sep-08	500	107	124	134	122	123	153.0	118.5	1631100	3365700
30-Sep-08	230	59	88	134	104	122	153.0	118.5	1631100	3404000
1-Oct-08	20	68	85	131	104	122	153.0	118.5		3425200
2-Oct-08	0	50	67	130	90	121	153.0			
3-Oct-08	0	50	67	127	90		153.0			
4-Oct-08	0	51	68	125	88			118.5	1812900	3524100
5-Oct-08	0	38	55	130	85			118.5	1837200	
6-Oct-08	0	51		130		118				3578300
7-Oct-08	0	55		130	83		153.0	118.5	1890200	
8-Oct-08	0	59		129	80		153.0	118.5	1929100	3638000
9-Oct-08	0	48		130	83		153.0	118.5	1938300	
10-Oct-08	0	44		130	79		153.0	118.5	1973800	
11-Oct-08	0	42	59	128	78		153.0	118.5	2003900	
12-Oct-08	0	32		130	71	117	153.0		2035900	
13-Oct-08	0	37		133		117				3746900
14-Oct-08	0	29		135		117				3774000
1 1- 001-00	U	23	+0	100	00	11/	100.0	110.5	2033100	3114000

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	eak Collection Recovery Syste LCRS) daily ra	elevation.	#2 elevation	ion					9	el G
	ect Sy aily	<u>e</u>	<u>e</u>	/ati	۲	В	st	40	ota	ota
	coll ery	#1	±2 (<u>@</u>	-17	-17	Crest	Toe		2 T
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Date	Leak Collection Recovery System (LCRS) daily rate	RPW	RPW	Pond elevation	MW08-14A	MW08-14B	RWP (RWP	RPW-1 Total Gallons	RPW-2 Total Gallons
15-Oct-08	0	39	44		66	118	153.0	118.5	2137100	3802200
16-Oct-08	_	60	49		68	118	153.0	118.5	2170900	3825700
17-Oct-08		63	51		69	118	153.0	118.5	2194900	3852600
18-Oct-08		62	51		68	118	153.0	118.5	2226700	3880300
19-Oct-08		63	51		68	118	153.0	118.5	2249300	3905500
20-Oct-08		63	51		68	118	153.0	118.5	2270100	3932300
21-Oct-08		62	50		67	118	153.0	118.5	2295400	3958700
22-Oct-08		65	51		68	118	153.0	118.5	2310500	3984500
23-Oct-08							153.0	118.5		
24-Oct-08							153.0	118.5		
25-Oct-08							153.0	118.5		
26-Oct-08							153.0	118.5		
27-Oct-08							153.0	118.5		
28-Oct-08		62	49		55	118	153.0	118.5	2472400	4137000
29-Oct-08		62	49		53	118	153.0	118.5		
30-Oct-08		62	49		52	118	153.0	118.5	254980	4184500
31-Oct-08		62	51		54	118	153.0	118.5	2590500	4208700
1-Nov-08		40	51		50	118	153.0	118.5	2624500	4224500
2-Nov-08		-20	32		50	118	153.0	118.5	2665400	4243600
3-Nov-08		-20	32		46	118	153.0	118.5	20705500	4268100
4-Nov-08		-20	32		45	118	153.0	118.5	2743900	4294200
5-Nov-08		-20	32		43	118	153.0	118.5	2781200	4318400
6-Nov-08		-20	32		42	118	153.0	118.5	2817500	4341600
7-Nov-08		2	34		41	118	153.0	118.5	2856200	4364800
8-Nov-08		6	29		42	118	153.0	118.5	2890900	4390000
9-Nov-08		12	23		40	118	153.0	118.5	2929400	4412800
10-Nov-08		33	11		41	118	153.0	118.5	2960800	4437700
11-Nov-08		40	30				153.0			4462800
12-Nov-08		46	18			118			2980000	4487200
13-Nov-08		50	19			118				
14-Nov-08		53	39			118		118.5		4538800
15-Nov-08		57	39		58			118.5	2980000	
16-Nov-08		59	39		58	118		118.5	2980000	
17-Nov-08		57	42		59	118		118.5	2980000	4611600
18-Nov-08		58	42		60	118	153.0	118.5	2980000	4636200
19-Nov-08		58	43		63			118.5		4665200
20-Nov-08		59	44		60	118		118.5	2980000	4691500
21-Nov-08		59	45		61	118	153.0	118.5	2980000	4718343
22-Nov-08		58	44		61	118	153.0	118.5	2980000	4743700
23-Nov-08		58	35		63	118		118.5	2980000	4797900
24-Nov-08		58	35		63	118		118.5	2980000	4797900
25-Nov-08		58	35			118			2980000	
26-Nov-08		59	35		62	118			2980000	4854400
27-Nov-08							153.0	118.5	2980000	

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Appendix E

Daily SWPPP inspection and activity logs

Data located on included DVD

Appendix F

Rock Creek and Big Hurrah Water Chemistry Data

Data located on included DVD

Appendix G

Rock Creek turbidity data

Data located on included DVD

Appendix H

Rock Creek Geochemical Monitoring results

Composite	Date Range	Paste pH	C total %	S total %	NP/AP	Lab	Reference #	Comments
Week 1	12/30/2007-1/5/2008	8.2	2.12	1.20	3.1	ACME	VAN08003847	Sobek Acid Base Accounting completed by CanTest
Week 2	1/6-1/12	8.1	1.92	1.15	3.1	ACME	VAN08005262	Sobek Acid Base Accounting completed by CanTest
Week 3	1/13-1/19	7.8	0.64	0.50	3.1	ACME	VAN08005262	Sobek Acid Base Accounting completed by CanTest
Week 4	1/20-1/26	8.1	1.31	0.97	3.5	ACME	VAN08005262	Sobek Acid Base Accounting completed by CanTest
Week 5	1/27-2/2	8.2	0.99	0.87	2.7	ACME	VAN08005262	Sobek Acid Base Accounting completed by CanTest
Week 6	2/3-2/9	8.2	1.10	0.86	3.0	ACME	VAN08005262	Sobek Acid Base Accounting completed by CanTest
Week 7	2/10-2/16	8.3	1.26	1.01	3.6	ACME	VAN08005262	Sobek Acid Base Accounting completed by CanTest
Week 8	2/17-2/23	8.0	1.08	0.88	2.8	ACME	VAN08005262	Sobek Acid Base Accounting completed by CanTest
Week 9	2/24-3/1	7.9	1.27	1.03	2.9	ACME	VAN08005262	Sobek Acid Base Accounting completed by CanTest
Week 10	3/2-3/8	7.6	0.92	0.47	3.7	ACME	VAN08005262	Sobek Acid Base Accounting completed by CanTest
Week 11	3/9-3/15	8.0	1.09	1.00	2.8	ACME	VAN08005262	Sobek Acid Base Accounting completed by CanTest
Week 12	3/16-3/22	8.3	1.18	0.98	3.0	ACME	VAN08005262	Sobek Acid Base Accounting completed by CanTest
								Sobek Acid Base Accounting completed by CanTest,
Week 13	3/23-3/29	N/A	1.03	0.77	N/A	ACME	VAN08005262	Paste pH and NP/AP not completed by ACME (lost?)
								Composite sample not returned to Rock Creek by
Week 14	3/30-4/5	N/A	N/A	N/A	N/A			AAL-Fbx (samples discarded)
Week 15	4/6-4/12	no drilling	no drilling	no drilling	no drilling			
Week 16	4/13-4/19	no drilling	no drilling	no drilling	no drilling			
Week 17	4/20-4/26	pending	pending	pending	pending			Rock Creek lab
Week 18	4/27-5/3	8.3	1.20	1.31	2.6	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 19	5/4-5/10	8.2	1.99	1.25	3.5	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 20	5/11-5/17	8.4	1.46	1.09	3.5	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 21	5/18-5/24	8.3	1.65	1.06	3.9	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 22	5/25-5/31	8.2	1.60	1.11	3.4	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 23	6/1-6/7	8.3	1.49	1.15	3.0	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 24	6/8-6/14	8.3	1.38	0.90	4.0	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 25	6/15-6/21	8.4	1.36	1.21	3.0	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 26	6/22-6/28	7.6	1.12	0.64	4.1	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 27	6/29-7/5	7.8	1.63	1.41	2.3	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 28	7/9-7/12	8.4	1.94	1.38	3.1	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 29	7/13-7/19	8.2	1.37	1.34	2.4	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 30	7/20-7/26	8.0	1.73	1.25	3.0	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 31	7/27-8/2	8.3	1.44	1.21	3.0	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 32	8/3-8/9	7.7	1.12	1.06	1.8	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 33	8/10-8/16	8.1	1.04	1.01	2.5	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 34	8/17-8/23	8.2	1.06	1.06	2.5	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses

Composite	Date Range	Paste pH	C total %	S total %	NP/AP	Lab	Reference #	Comments
Week 35	8/24-8/30	7.4	0.77	0.37	2.7	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 36	8/31-9/6	7.9	1.51	1.31	1.7	CanTest	2-21-907	Rock Creek lab submitted to CanTest for analyses
Week 37	9/7-9/13	pending	pending	pending	pending			AT CatTest waiting for analyses
Week 38	9/14-9/20	pending	pending	pending	pending			AT CatTest waiting for analyses
Week 39	9/21-9/27	pending	pending	pending	pending			AT CatTest waiting for analyses
Week 40	9/28-10/4	pending	pending	pending	pending			AT CatTest waiting for analyses
Week 41	10/5-10/11	pending	pending	pending	pending			AT CatTest waiting for analyses
Week 42	10/12-10/18	no drilling	no drilling	no drilling	no drilling			
Week 43	10/19-10/25	no drilling	no drilling	no drilling	no drilling			
Week 44	10/26-11/1			no drilling				
Week 45	11/2-11/8	no drilling	no drilling	no drilling	no drilling			
Week 46	11/9-11/15			no drilling				
Week 47	11/16-11/22	no drilling	no drilling	no drilling	no drilling			
Week 48	11/23-11/29	pending	pending	pending	pending			prepped in Rock Creek lab, not yet submitted
Week 49	11/30-12/6	n/a	n/a	n/a	n/a			Mine Suspended Operations
Week 50	12/7-12/13	n/a	n/a	n/a	n/a			Mine Suspended Operations
Week 51	12/14-12/20	n/a	n/a	n/a	n/a			Mine Suspended Operations
Week 52	12/21-12/27	n/a	n/a	n/a	n/a			Mine Suspended Operations

						Standard		Siderite			
						Sobek		Corrected			
Composite	Date Range	Paste pH	C total %	S total %	NP/AP	NP	Net NP	NP	ICP	Lab	Reference#
Month 1	12/30/2007-2/2/2008	8.3	1.31	1.00	2.7	85.0	54.0	83.5	attached	ACME	VAN08005263
Month 2	2/3-3/1	8.0	1.21	1.04	2.7	86.3	54.6	83.5	attached	ACME	VAN08005263
Month 3	3/2-3/29	8.0	1.08	0.85	2.7	71.3	45.0	70.4	attached	ACME	VAN08005263
Month 4	3/30-5/3	pending	pending	pending	pending	pending	pending	pending			
Month 5	5/4-5/31	8.4	1.44	1.16	3.3	116.9	81.0	115.8	attached	CanTest	2-21-907
Month 6	6/1-6/28	8.5	1.35	1.18	3.1	113.2	76.6	107.1	attached	CanTest	2-21-907
Month 7	6/29-8/2	7.9	1.65	1.10	3.2	110.6	76.5	112.1	attached	CanTest	2-21-907
Month 8	8/3-8/30	8.1	1.10	1.00	2.8	87.1	55.9	82.9	attached	CanTest	2-21-907
Month 9	8/31-9/27	pending									
Month 10	9/28-11/1	pending									
Month 11	11/2-11/29					·					
Month 12	11/30-12/27	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		

Composite	Notes
Month 1	Sobek and Siderite Corrected Acid Base Accounting completed by CanTest
Month 2	Sobek and Siderite Corrected Acid Base Accounting completed by CanTest
Month 3	Sobek and Siderite Corrected Acid Base Accounting completed by CanTest
Month 4	Rock Creek lab
Month 5	Rock Creek lab submitted directly to CanTest for analyses
Month 6	Rock Creek lab submitted directly to CanTest for analyses
Month 7	Rock Creek lab submitted directly to CanTest for analyses
Month 8	Rock Creek lab submitted directly to CanTest for analyses
Month 9	AT CatTest waiting for analyses
Month 10	
Month 11	Monthly composite is same as week 48 composite. There was no other weekly composites for month 11.
Month 12	Mine Suspended Operations