

**KINROSS**

**Fort Knox**

**ANNUAL ACTIVITY REPORT  
for  
REPORTING YEAR 2015**



February 2016

## TABLE OF CONTENTS

1.	INTRODUCTION .....	3
2.	SUMMARY OF ACTIVITIES.....	4
3.	PERMITTING ACTIVITIES .....	5
4.	LAND STATUS .....	6
5.	SAFETY .....	6
6.	MINE OPERATIONS.....	8
7.	MILL OPERATIONS.....	11
8.	HEAP LEACH.....	12
9.	TAILINGS STORAGE FACILITY (TSF).....	13
10.	FRESH WATER SUPPLY RESERVOIR AND WETLANDS .....	19
11.	RECLAMATION .....	19
12.	FINANCIAL ASSURANCE .....	21
13.	MINE WATER USEAGE (WATER BALANCE).....	22
14.	EXPLORATION .....	23
15.	COMMUNITY AFFAIRS .....	23

## 1. INTRODUCTION

Fairbanks Gold Mining, Inc. (FGMI), a wholly owned subsidiary of Kinross Gold Corporation, has prepared this annual report to comply with the conditions described in Section 11.b. of the Amended and Restated Millsite Lease ADL Nos. 414960 and 414961 and the ADEC Waste Management Permit 2014DB0002 for the Fort Knox Mine.

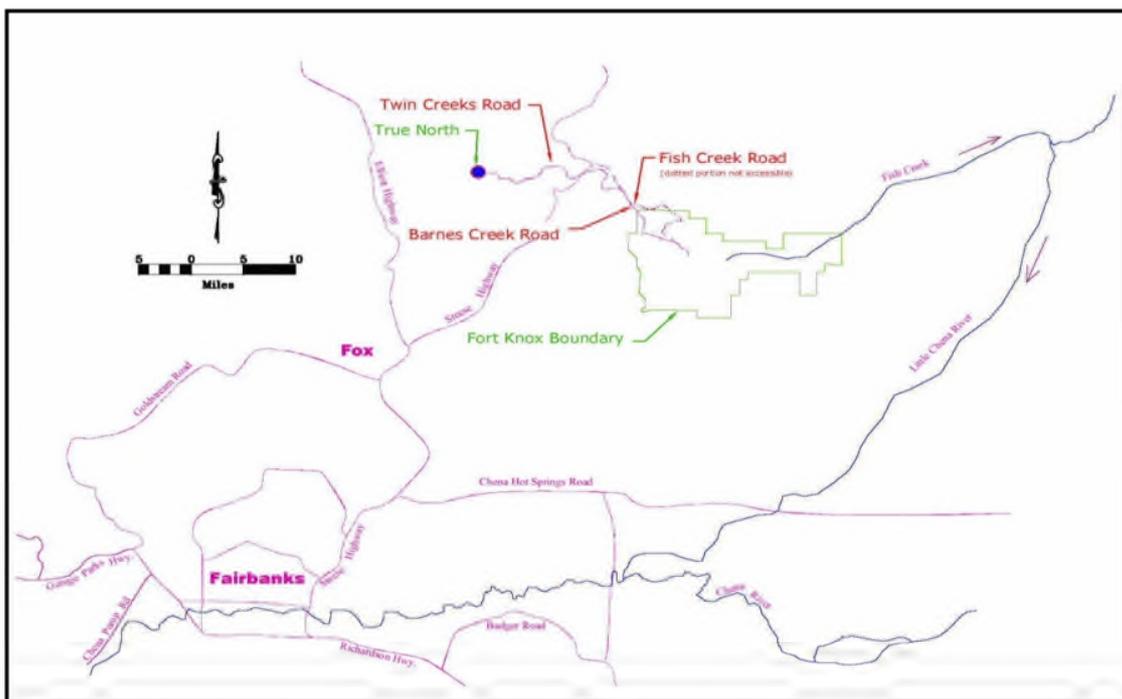
The Kinross Fort Knox mine includes the open pit mine, mill, tailings storage facility, water storage reservoir and the Walter Creek Heap Leach facility. Major reclamation activities at the True North Mine were completed in 2012. Post-closure monitoring and maintenance activities continue at True North. These facilities are located within the Fairbanks North Star Borough, approximately 25 highway miles northeast of Fairbanks, Alaska (Figure 1).



The milling and mining operations at Fort Knox continue to operate 24 hours a day, 365 days a year. As of the end of 2015, FGMI employed 657 people. Fort Knox produced 401,553 ounces of gold in 2015.

This report describes the permitting, mining, milling, heap leach and reclamation activities during calendar year 2015 and planned activities for 2016.

Figure 1: Facility Locations



## 2. SUMMARY OF ACTIVITIES

In 2015, Fort Knox had a range of activities underway in the areas of production, construction, and permitting. In summary, these activities included:

- Construction of Stage 5 of the Walter Creek Heap Leach was completed;
- Construction of the Walter Creek Heap Leach Facility Barren Solution Booster Pump Station was completed;
- Construction of the TSF Dam final 14-foot raise to elevation 1540 fmsl was completed;
- Performed a Failure Modes and Effects Analysis for the TSF;
- Performed a periodic dam safety inspection on the TSF dam;
- Onsite land farming continued at the Yellow Pup Waste Rock Dump for the former Fish Creek Fuel Island decommissioning material;
- Decommissioning of the 2013 Fuel Island was completed;
- Onsite land farming was initiated at the Yellow Pup Waste Rock Dump for the 2013 Fuel Island decommissioning material;
- Construction of the 2015 Fuel Island was completed;
- Phase 8 pit stripping activities continued;
- Mining of Phase 8 ore began;
- The damaged Solo Creek Causeway was removed and replaced;
- The existing Gil Causeway culvert was removed and replaced;
- The existing culvert in Pond F outlet channel was removed and replaced;
- Began discharge of non-contact, non-process groundwater from dewatering wells in accordance with APDES Permit No. AK0053643;
- The Notice of Intent to Construct the Barnes Creek Heap Leach Dam submitted to ADNR;
- The Notice of Intent for a Certificate of Approval to Modify the TSF Dam (AK00212) for the design review and construction of the TSF spillway submitted to ADNR;
- The Notice of Intent for a Certificate of Approval to Modify the TSF Dam (AK00212) to raise the dam to elevation 1557 fmsl submitted to ADNR;
- Began construction of a reverse osmosis (RO) treatment system for the non-contact, non-process groundwater from pit dewatering wells and;
- True North reclamation completed in August 2012 and is under post-closure monitoring.



In 2016, the major activities planned include:

- Obtain approval for construction of Stages 6 and 7 of the Walter Creek Valley Fill Heap Leach Facility;
- Begin construction of Stage 6 of the Walter Creek Valley Fill Heap Leach Facility;
- Obtain approval for construction of a 17-foot raise of the TSF dam to elevation 1557 fmsl;
- Begin construction of a 17-foot raise of the TSF dam;

- Complete the RO treatment system for the non-contact, non-process groundwater from pit dewatering wells;
- Obtain approval for construction of the Barnes Creek Heap Leach Facility;
- Obtain approval for construction of the TSF Dam spillway;
- Obtain APDES permit modification for the RO treatment system's treatment of contact water;
- Receive approval from ADEC SPARs for closure of the diesel contaminated material land farm from the 2013 decommissioning of the former Fish Creek Fuel Island, and;
- Conduct bench and pilot testing for TSF pond and interceptor system waters for a future water treatment system.

### 3. PERMITTING ACTIVITIES

The following is a list of the approved plans and permits issued to FGMI in 2015:

- In January, USACOE issued POA-1992-574 for construction of the APDES permitted Outfall 001;
- In March, ADNR issued a Certificate of Approval to Modify A Dam for the TSF Dam (AK00212) for construction of the base working platform to elevation 1525 fmsl;
- In March, Alaska State Fire Marshall issued the Plan Review Certificate for the Fort Knox Mine Barren Solution Booster Pump Station (2015Fair1001).
- In April, ADNR issued the seasonal burning permit;
- In April, ADNR executed the entry authorization for the approved Administrative Reroute of RST 644 Cleary Summit to Gilmore Dome Trail;
- In April, ADNR approved Fort Knox Plan of Operations, 2015 Heap Leach Organics Stockpile Location and Trail Reroute (Amendment Approval F2014852POO.3);
- In May, USDOT issued Hazardous Materials Certificate of Registration for Registration Years 2015 - 2018;
- In May, Alaska Department of Revenue issued the annual Mining License;
- In June, Alaska State Fire Marshall issued the Plan Review Certificate for the Fuel Island #2 Fort Knox Gold Mine (2015Fair1085);
- In July, ADEC authorized storm water discharge, Permit No. AKR06AB17;
- In August, US Department of Justice, BATF&E issued Federal Explosives License/Permit No. 9-AK-090-22-8A-12031;
- In August, ADNR accepted the FGMI financial assurance in the amount of \$96,785,203.00;
- In August, ADNR issued the Temporary Certificate of Approval to Operate a Dam for the Walter Creek Heap Leach Pad Dam (AK00310);
- In October, ADF&G issued Fish Habitat Permit FH-III-0218 for culvert removal and replacement in Pond F outlet channel in the developed wetland complex;
- In October, ADF&G issued Fish Habitat Permit FH15-III-0219 for culvert removal and replacement at the Gil Causeway;



- In October, ADNR issued Temporary Certificate of Approval to Operate a Dam Walter Creek Heap Leach Pad Dam (AK00310).
- In October, ADNR issued a 90-day extension for Certificate of Approval to Operate a Dam for the Fort Knox Tailings Dam (AK00212);
- In December, ADNR issued the Certificate of Approval to Operate a Dam for the Fort Knox Water Dam (AK00211);
- In December, ADNR issued the Temporary Certificate of Approval to Operate a Dam for the Fort Knox Tailings Dam (AK00212), and;
- In December, ADNR issued the Temporary Certificate of Approval to Operate a Dam for the Walter Creek Heap Leach Pad Dam (AK00310).

The following is a list of the planned permitting activities for FGMI in 2016:

- Obtain approval for construction of Stages 6 and 7 of the Walter Creek Valley Fill Heap Leach;
- Obtain approval for construction of a 17-foot raise of the TSF dam to elevation 1557 fmsl;
- Obtain approval for construction of the TSF Dam spillway;
- Obtain APDES permit modification for the RO treatment system's treatment of contact water, and;
- Obtain approval for construction of the Barnes Creek Heap Leach Facility.

#### **4. LAND STATUS**

The project area encompasses approximately 7,982 acres, of which there are no federal lands. The project area includes the Amended and Restated Millsite Lease, Upland Mining Lease, private land. The Amended and Restated Millsite Lease contains approximately 5,828 acres of State of Alaska land. FGMI private land holding is approximately 2,154 acres, which includes the private land of the Upland Mining Lease (approximately 1,179 acres).

#### **5. SAFETY**

##### **PEOPLE**

Keeping safety at the forefront of everything we do at Kinross Fort Knox is the first and most important priority! In 2015 Kinross Fort Knox achieved many great safety accomplishments mine wide. Two million safe hours worked was achieved in December.

The Administration Group (Warehouse, Health & Safety, Environmental, Accounting, Human Resources, and Technical Services) has not had a loss time incident (LTI) since April 2005. The group also worked six years without a reportable incident.

The Ore Processing Groups include Maintenance (MMTC) and Operations; together they achieved four years without an LTI in June. Operations



alone reached two years without a reportable incident. MMTC alone achieved 12 years without an LTI. Mobile Equipment Maintenance (MEM) has achieved nine years without an LTI and 1.9 million safe hours worked.

The Mine Operations Department alone reached a milestone of one year worked without an LTI.

All employees within the Fort Knox Team; whether Exempt or Non-Exempt, are a part of the safety culture. Safety programs such as SOS (See It, Own It, Solve It) and STOP Audits allow us to be aware of our behavior along with our coworkers. Fort Knox's own internal Living Our Values Awards during the Holiday Season helps us remember our core values while also recognizing several outstanding employees. A few other safety implements used mine wide include Field Level Risk Assessment (FLRA) and Job Hazard Analysis (JHA).



### **INTERNATIONAL CYANIDE MANAGEMENT CODE**

Kinross Fort Knox is a signatory company of the International Cyanide Management Code for the Manufacture, Transport, and Use of Cyanide in the Production of Gold (Code). The Code's development occurred in the early 2000s and implemented in 2005 for safe and responsible management of cyanide by an international multi-stakeholder committee under the auspices of the United Nations Environment Program (UNEP) and is administered by the International Cyanide Management Institute (ICMI). As a signatory company, Fort Knox is required to meet the Code's Principles and Standards of Practice criteria, which is verified by strict independent third-party auditing. Fort Knox achieved Code certification in February 2008, received recertification in September 2011 and most recently February 2015. Fort Knox certification summary audit reports may be found at <http://www.cyanidecode.org>.

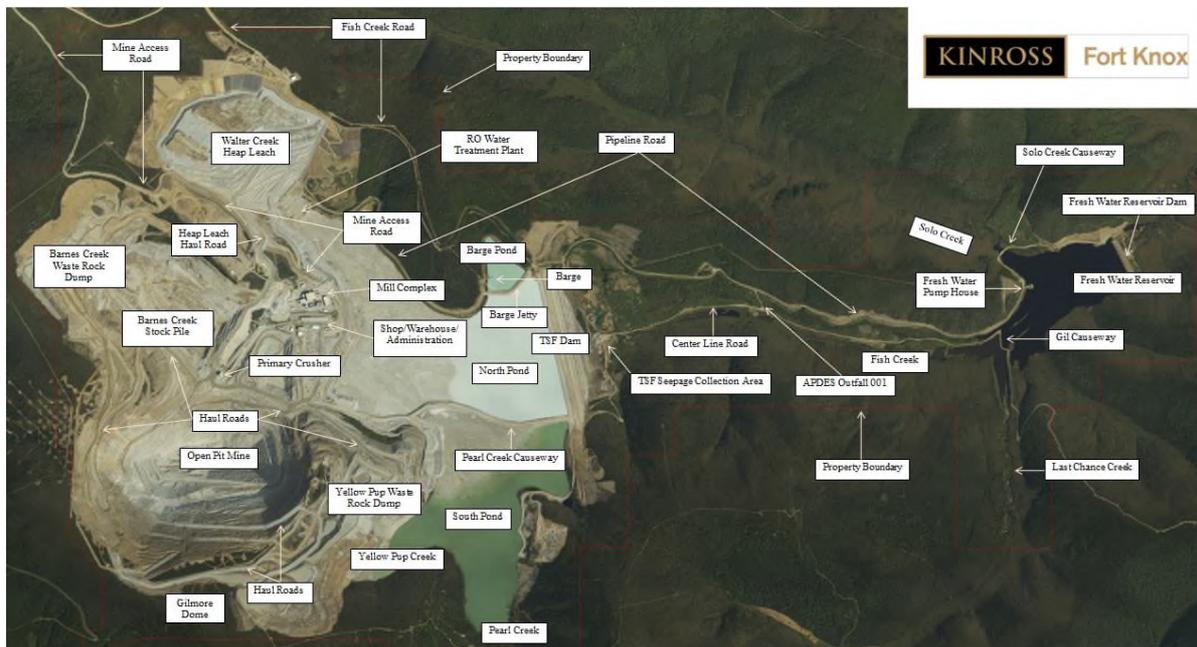
### **MINE ACCESS**

FGMI continues to maintain the mine access roads from the Steese Highway to Fort Knox and True North (Figure 1). The road surface is graded to insure a smooth running surface and proper drainage. During the winter months, the Fort Knox road is kept free of snow and is sanded as necessary to maintain safe operating conditions. The True North road is plowed for snow as needed during the winter months since access to the site is not routinely required. In the summer months, FGMI uses calcium chloride and water for dust suppressants on the Fort Knox access and mine-site roads (Figure 2). These measures have limited the amount of fugitive dust on these roads. In 2015, Fort Knox did not register a complaint of road dust.



FGMI Security continues to patrol the mine site and access roads to ensure the safety of our employees, contractors, guests, and the public. Access is limited based on need and function. Safety training is tailored in a similar manner.

Figure 2: Local Roads and Mine Facilities



### Recreational Trails



During the initial Millsite Lease application process a series of public meetings were held to identify trail systems that would potentially be affected by mining activities. In 2011, Fort Knox initiated meetings with ADNR Trails and Easement Section to start the process of rerouting trails for future use. Meetings with ADNR continued in 2013. A formal application was submitted to the Trails and Easement Section with an alternate route in 2013. As part of this process, a public notice and comment period occurred in 2014. In 2015, ADNR executed the entry authorization for the approved Administrative Reroute of RST 644 Cleary Summit to Gilmore Dome Trail.

## 6. MINE OPERATIONS

### PIT PRODUCTION

In 2015, FGMI mined 60.86 million tons of ore and waste from the Fort Knox pit with an average production rate of 166.7 thousand tons per day (Table 1).

Table 1: Fort Knox Annual Mining Rates

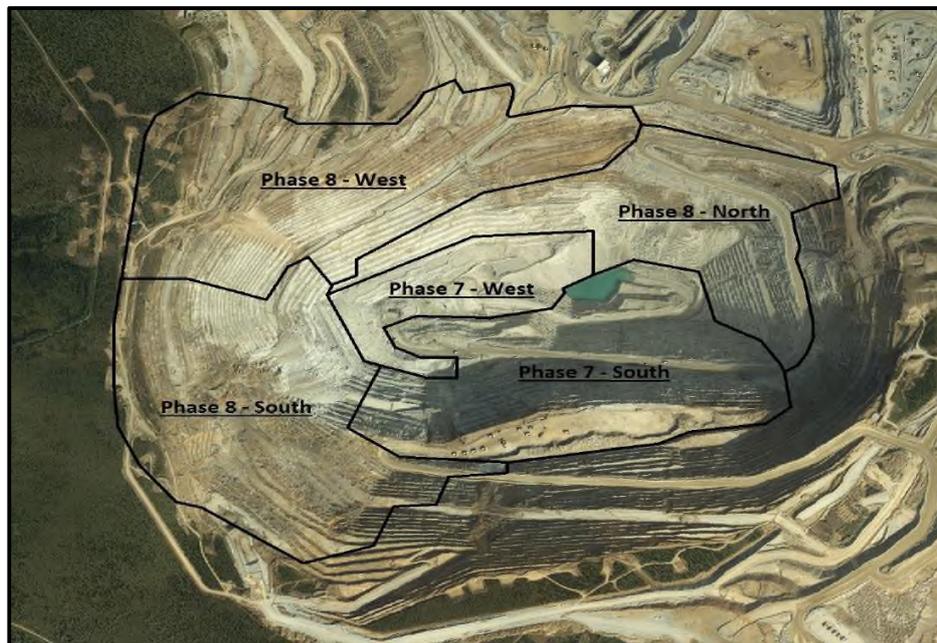
<b>Year</b>	<b>Mill Ore (Million Tons)</b>	<b>Transition Grade Ore (Million Tons)</b>	<b>Leach Grade Ore (Million Tons)</b>	<b>Waste (Million Tons)</b>	<b>Total (Million Tons)</b>
1996	.96	.36	0	15.36	16.68
1997	12.57	4.88	0	14.93	32.38
1998	13.83	5.27	0	14.19	33.29
1999	14.10	4.09	0	12.16	30.35
2000	15.51	2.20	0	17.89	35.60
2001	12.09	1.24	0	12.62	25.95
2002	11.73	.86	0	12.00	24.59
2003	11.08	2.09	0	17.43	30.60
2004	10.80	6.80	0	24.09	41.69
2005	13.23	5.86	0	44.16	63.25
2006	12.39	3.68	0	35.00	51.07
2007	11.71	10.31	0	23.92	45.94
2008	12.78	3.82	13.3	16.40	46.30
2009	11.96	4.11	12.70	20.03	48.80
2010	11.95	1.35	8.52	20.59	42.41
2011	3.96	.13	4.76	25.70	34.55
2012	10.42	3.19	14.98	34.53	63.12
2013	9.38	4.88	9.59	39.43	63.28
2014	6.83	4.94	4.64	32.83	49.24
2015	10.94	3.35	10.80	35.77	60.86
<b>Total</b>	<b>218.22</b>	<b>73.41</b>	<b>79.29</b>	<b>469.03</b>	<b>839.95</b>

Mining operations continue 24-hours a day, 365-days per year at the Fort Knox Mine. Ore and waste are mined using standard drilling and blasting techniques with shovel and haul truck fleets to move the material. Blast holes are sampled and assayed for production grade control purposes and material is hauled to the rock dumps, primary crusher, heap leach, or low-grade stockpiles depending on grade.

In 2015, mining within the Fort Knox open pit occurred in Phase 7 and Phase 8 (Figure 3). Phase 7 stripping commenced in the 4<sup>th</sup> quarter of 2008. Stripping for phase 7 continued into 2012 before sustained ore was achieved.

In 2016, the final pit layback area known as Phase 8 is scheduled to continue mining activities. This phase of the pit is planned to deliver ore to the mill and the leach pad from 2015 until mining activities end in 2019.

Figure 3: Fort Knox Pit Phases



## DEWATERING

As of the end of 2015, the dewatering system is comprised of 28 dewatering wells, including two of which are inactive, and four Fish Creek wells (located north and out of the pit in the Barnes Creek/Fish Creek drainage). Through the course of 2015, one well (DW-220) was taken out of service due to mining expansion. Four new wells were added; two in the west pit (DW-357, DW-375) and two in the east pit (DW-371, and DW-372).

The average pumping rate from the dewatering system in 2015 was 2,630 gpm, which was 165% higher than in 2014. The increase anomaly can be attributed to the area's record rainfall throughout the summer of 2014 and precipitation events of 2015. Approximately 75% of dewatering flow was pumped to the tailing impoundment. Approximately 15% was pumped directly from the Fish Creek wells to the Mill. Approximately 10% was discharged to the freshwater reservoir.

Select piezometers are monitored weekly for changes in water levels and the remaining piezometers are monitored quarterly.

Since the Tailings Storage Facility (TSF) design did not have capacity to contain all water until the end of mine life, an Alaska Pollutant Discharge Elimination System (APDES) permit application was submitted to the Alaska Department of Environmental Conservation (ADEC), Division of Water in early 2012. ADEC granted FGMI an APDES permit in August 2012 and effective October 2012 to discharge non-process and non-contact groundwater extracted from pit dewatering wells into the Old Fish Creek Channel from which it will flow to the freshwater reservoir. Since receiving the APDES permit and until March 3, 2015, there has been no discharge of dewatering well water. Discharge of dewatering well groundwater began March 4, 2015, and approximately 434 acre feet was discharged in 2015.

## 7. MILL OPERATIONS

Mill feed is first crushed to minus 6 inches in the primary gyratory crusher located near the Fort Knox pit and then conveyed to a coarse-ore stockpile located near the mill. The crushed material is conveyed to a semi-autogenous (SAG) mill. The SAG mill operates in open circuit and feeds two ball mills. The ball mills operate in closed circuit through cyclone packs. The cyclone packs regulate the size of material that is allowed to move beyond the grinding circuit. A gravity gold recovery circuit operates in conjunction with the grinding circuit. It consists of three Knelson concentrators.



Correctly sized material flows into a high rate thickener and then into leach tanks where cyanide is used to dissolve the gold. Activated carbon is used in the carbon-in-pulp circuit to absorb the gold from the cyanide solution. Carbon particles loaded with gold are removed from the slurry by carbon screens and are transferred to the gold recovery circuit. In this circuit, the gold is stripped from the carbon using a strong alkaline cyanide solution in conjunction with high temperature and high pressure. The gold is recovered from this solution by electro-winning, where it is plated onto a cathode. The gold is removed from the cathode mechanically and melted into doré bars for shipment to an offsite refinery for final processing.

Some hard ore of a critical size is rejected from the SAG mill in order to increase throughput. This material is crushed and stockpiled for use on the Walter Creek Heap Leach Facility. Mill tailings are discharged into the TSF below the mill. Table 2 displays a summary of the tonnage milled from November 1996 through December 31, 2015.

The mill continues to focus on operational improvements to increase throughput, recovery, efficiency and reliability.



Table 2: Fort Knox Annual Milling Rates

Year	Mill Production (Million Tons)
1996	0.77
1997	12.16
1998	13.74
1999	13.82
2000	14.99
2001	15.66
2002	15.26
2003	15.08
2004	14.59
2005	14.38
2006	14.84
2007	14.02
2008	15.11
2009	14.14
2010	14.56
2011	14.88
2012	14.55
2013	13.96
2014	14.92
2015	14.82
<b>Total</b>	<b>276.25</b>

The projected mill throughput for 2016 is approximately 14.6 million tons and gold production is estimated at 246,000 ounces.

## 8. HEAP LEACH

The Walter Creek Valley Heap Leach Facility was brought into production in 2009. On October 13, 2009, ADNR issued a Certificate of Approval to operate the heap leach dam. On October 14, 2009, FGMI began filling the in-heap storage pond. In November 2009, FGMI had the first gold pour from heap leach production. In 2015, approximately 27.7 million tons of ore were placed on the heap leach. Since the loading of heap leach ore began in 2009, a total of approximately 159 million tons have been placed on the heap leach, and 740,000 ounces of gold have been produced.



In 2011, construction of Stage 3 of the heap leach pad began and its construction completed in 2013. The Stage 4 construction of the heap leach pad began in 2012 and was completed in 2014. The Stage 5 construction began in 2012 with clearing and grubbing, and construction was completed in 2015. The Booster Pump Station was constructed in 2015. Stage 6 clearing and grubbing occurred in 2015. Projected

heap leach ore placement for 2016 is 29.8 million tons. The heap leach gold production for 2016 is estimated to be 142,000 ounces.

## **9. TAILINGS STORAGE FACILITY (TSF)**

The TSF consists of deposited tailings, decant pond, dam, seepage interception system, and the seepage monitoring system. The tailings depositional area is within the Fish Creek drainage and includes portions of the Walter Creek, Pearl Creek, and Yellow Pup drainages.

The TSF has three distinct ponds: the barge pond, north pond and south pond where the decant water pools. These ponds are located within the tailings deposition area upstream of the TSF dam. The barge pond is approximately 18 acres. The north pond fluctuates in size but covers an area that generally ranges from 300 to 400 acres. The south pond will fluctuate slightly, but should remain close to 245 acres. A bathymetric survey conducted in September 2015 showed the decant pond contains approximately 8,810 acre-feet of water. The increase in the pond's volume is attributed to the area's abnormal rainfall throughout 2014 and 2015 and does not represent the normal operating level of the TSF. Water management activities continue to be evaluated and implemented [i.e., storm water control, dewatering well groundwater discharge (APDES Permit No. AK0053643)] to reduce the additional volume created by the abnormal precipitation events.

The TSF dam is approximately 4,600 feet long and has a crest height of 366 feet. It impounds all of the tailings generated by the mill. The TSF and the mill form a closed system for process water. Water used in the mill is pumped from the decant pond and process water which has had the cyanide level reduced to low levels is returned to the decant pond in the tailings slurry.

### **TAILINGS DEPOSITION**

During the 2011 through 2015 construction seasons, tailings were deposited along the dam face by spigoting. The main tailings line ran along the upstream dam face at the 1525 elevation of the engineered random fill. The tailings flowed into 8-inch spigot pipes evenly spaced along the dam face. The purpose of the spigoting is to develop a beach 300 to 500 feet in width against the upstream face of the dam. The beach will improve the dam's Factor of Safety and enhance its long term stability.

### **TSF DAM RAISE**

Construction of a 52-foot raise of the TSF dam began in 2011 by raising the dam 27 feet. The raising of the dam 52 feet was necessary for increases in planned production with the addition of Phase 7 and would have exceeded the capacity of the TSF without the 52-foot raise. The dam raise is a modified centerline construction as depicted in Figure 4.

Construction of the 52-foot dam raise required three years. A 27-foot raise was completed during 2011, an 11-foot raise was completed in 2014, and the remaining 14 feet was completed in 2015. The base working platform for the 25-foot raise was constructed during 2013. The dam was constructed to its design height of elevation 1,540 fmsl in 2015.



- Provide a design for two new interceptor wells.

During winter of 2015, IW-14 and IW-15 were installed. They are constructed with 8" mill slotted and blank casing and are 400 and 380 feet deep, respectively. Anticipated flow for IW-14 is 150 gpm and 75 gpm for IW-15. Wells IW-10 and MW-4 were redeveloped and are producing enough water to contribute to seepage collection. Pump test results indicate they will produce 72 and 36 gpm, respectively. Pumps for IW-15, IW-14, IW-10 and MW-4 will be installed in the second quarter of 2016.

Improvement to the seepage intercept system in 2015 also included construction of the TSF north abutment drain system expansion which includes the 901 and 1001 seeps. The drain system expansion was completed above 1001 seep, and further construction was suspended due to winter weather until the 2016 construction season for the 1557' lift to the TSF dam.

A line of groundwater monitoring wells located immediately downstream of the interception system is monitored to insure that no process water is escaping the system and moving downstream.

Figure 5: Interceptor System

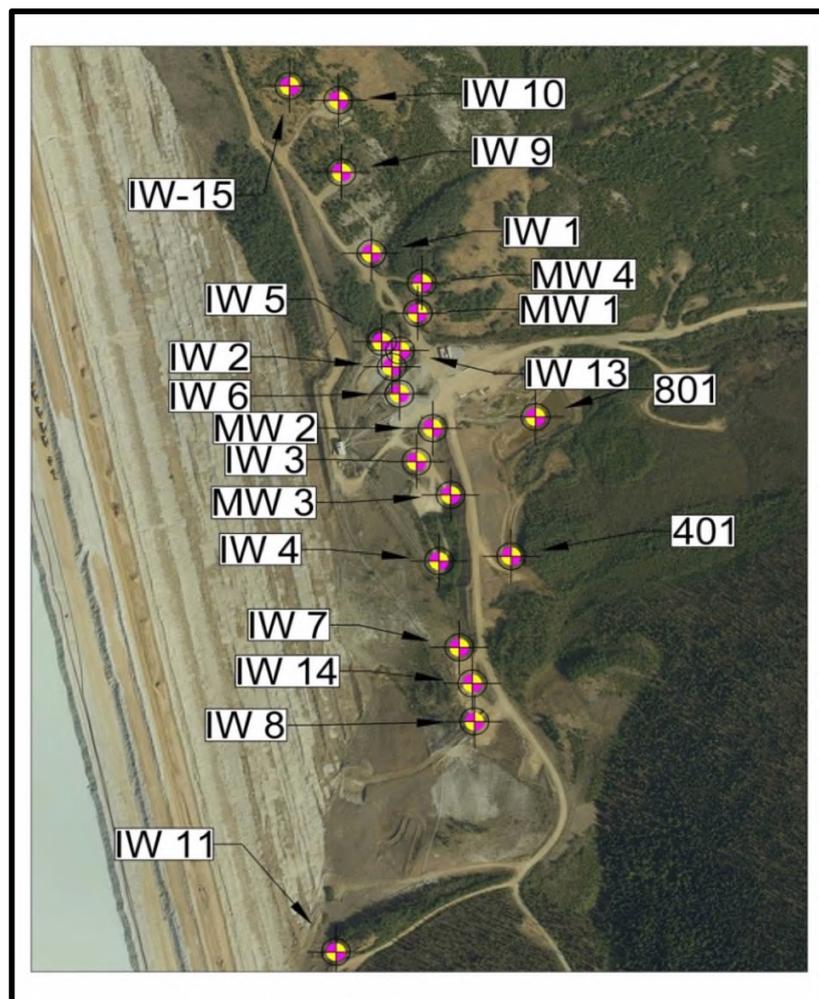


Table 3: TSF Interceptor System Pumping Rates

Well ID	Approximate Average Pumping Rate (gpm)	Well Depth (ft)
IW-1	76	320
IW-2	6	329
IW-3	23	310
IW-4	29	330
IW-5	55	380
IW-6	23	380
IW-7	15	197
IW-8	192	184
IW-10	Did not pump in 2015	260
IW-11	20	296
IW-13	40	480
IW-14	Did not pump in 2015	405
IW-15	Did not pump in 2015	380
MW-1	17	305
MW-3	7	296
MW-4	Did not pump in 2015	288
Well 401	6	36
Toe Drain (501)	33	n/a
<b>Total</b>	<b>542</b>	

### TSF DECANT AND SEEPAGE METALS CONCENTRATIONS

Antimony, arsenic, lead, and selenium concentrations continue to be analyzed in the TSF decant and seepage reclaim (Figures 6, 7, 8, and 9). These metal concentrations increased significantly as a result of introducing True North ore into the mill tailings beginning in 2001 and ending in 2004. Since 2004, the metals have trended down and remained low with the exception of lead. Lead nitrate was used in the milling process in 2008 and 2009 causing the lead concentrations in the decant water to elevate during this period.



Figure 6: Average Quarterly Antimony Concentrations in Decant

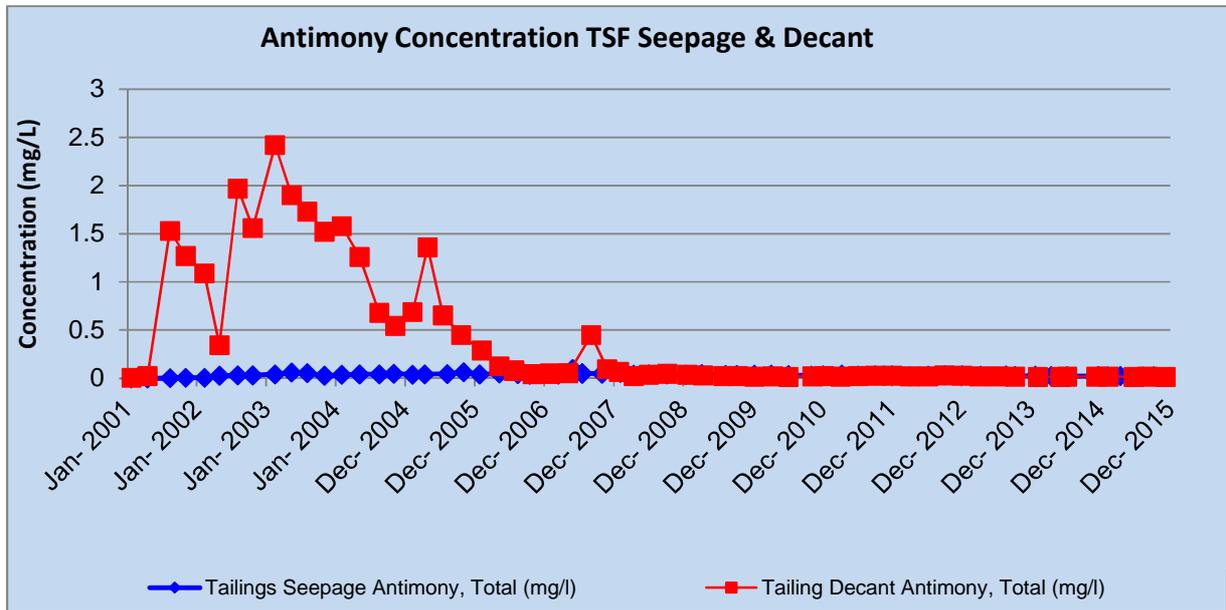


Figure 7: Average Quarterly Arsenic Concentrations in Decant

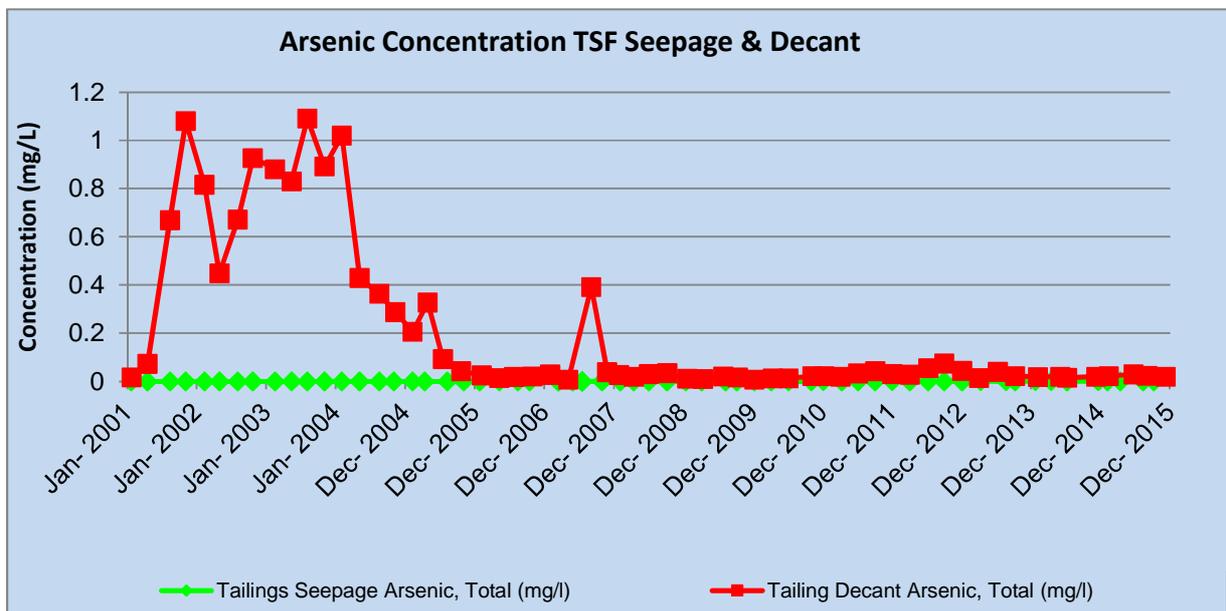


Figure 8: Average Quarterly Lead Concentrations in Decant

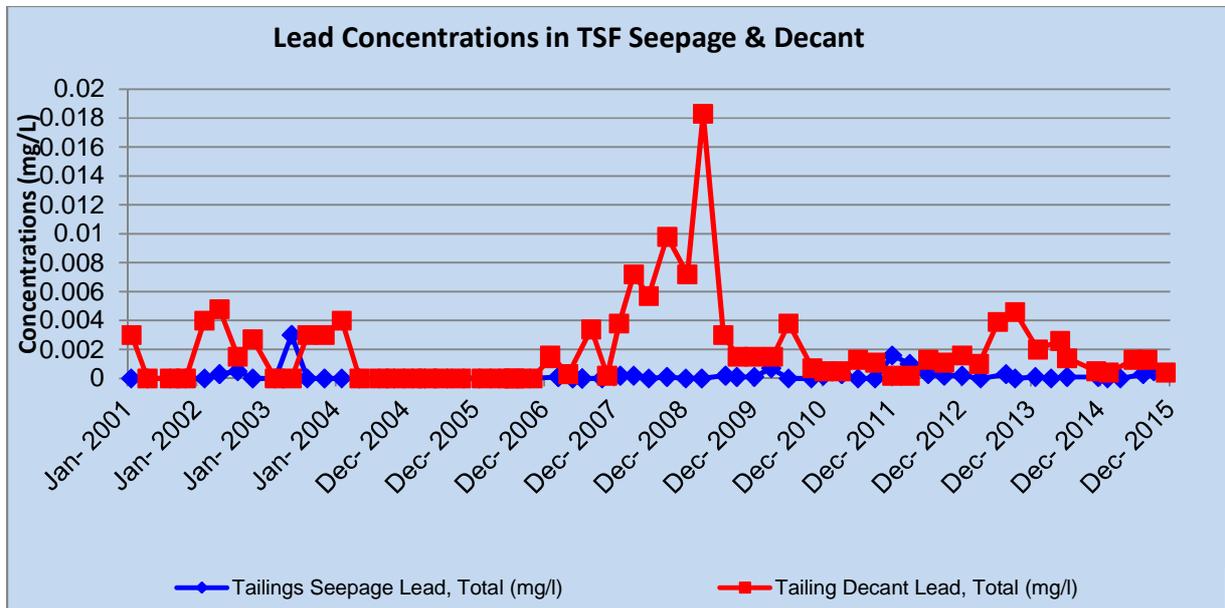
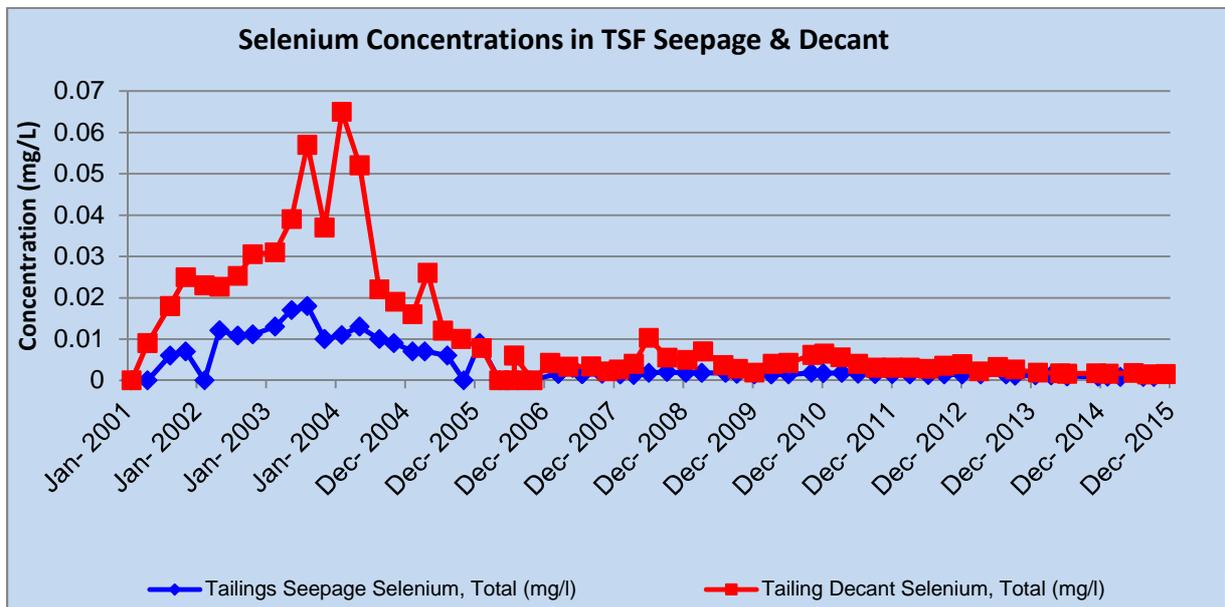


Figure 9: Average Quarterly Selenium Concentrations in Decant



## 10. FRESH WATER SUPPLY RESERVOIR and WETLANDS

The Alaska Department of Fish and Game (ADF&G) continues with their work on the water supply reservoir (WSR) and associated wetlands. In the 2015 annual technical report prepared by ADF&G summarizing their work on the WSR and wetlands, certain conclusions were stated:



- Self-sustaining populations of Arctic grayling and burbot have been established in the WSR.
- The post-mining goal for the Arctic grayling population was set at 800 to 1,600 fish greater than 200 mm in length, and the spring 2014 population estimate for Arctic grayling was 5,841 fish greater than 200 mm in length, which is a slight decrease from the estimated 2013 population.
- A goal for burbot population was not previously set, but a small population of fish larger than 400mm exists.

- Beaver population management remains a critical component to Arctic grayling population within the developed wetlands and WSR appears to remain a critical component to the productive capacity of the wetland complex for Arctic grayling.

Three culverts were removed and replaced in 2015.

- Identified in September 2014, the 12-foot diameter culvert at the Solo Creek Causeway on the north side of the WSR required replacement. The culvert was removed and replaced with an approved 10-foot culvert in February 2015;
- The existing 8-foot diameter culvert in the Gil Causeway was removed and replaced with a new 8-foot culvert in October 2015, and;
- The existing 6-foot diameter culvert in Pond F outlet channel in the developed wetland complex was removed and replaced with a new 6-foot culvert in October 2015.

## 11. RECLAMATION

### FORT KNOX

There were no reclamation activities in 2015.

Reclamation planned in 2016 will include wetland and upland vegetation plot trials and continued stabilization of disturbed areas.

Growth media is stockpiled for use in final reclamation and closure. It is estimated that approximately 3.6 million cubic yards (cy) are required for final reclamation. Table 4 summarizes the volumes of growth media stockpiled that exist and are planned. A survey to determine the amount of growth media available will be done after the dam raise and heap leach construction has been completed. A portion of the growth media stockpiled and available

borrow sources have been used because of its suitability for use as engineered seal and filter material for the TSF dam and engineered sub-base for the heap leach.

Table 4: Fort Knox Growth Media Stockpile and Borrow Quantities

Site	Volume (cy)
Yellow Pup GM Stockpile	1,276,798
Walter Creek GM Stockpile	2,141,590
Tailings South GM Stockpile	291,400
Tailings North GM Stockpile	3,186,400
Barnes Creek	425,029
<b>Total</b>	<b>7,321,217</b>

## TRUE NORTH MINE

Production from the True North Mine was terminated at the end of 2004. In 2009, the decision was made to abandon remaining reserves and to not continue with any additional mining at True North. FGMI submitted updated reclamation plans for True North in May 2012. The reclamation plan approval was issued by ADNR on July 26, 2012.

The True North annual inspection by ADNR performed on October 2, 2012 concluded all major earthwork and reclamation appeared to be complete, and FGMI could continue with post-closure monitoring and maintenance. A summary of reclamation work is shown in Table 5.

The reclamation plan prescribed the a seed mix of 50% Arctared Red Fescue, 20% Tundra Glaucous Bluegrass, 20% Gruening Alpine Bluegrass, and 10% Tufted Hairgrass. The seed application rate was approximately 9 lbs/acre. Fertilizer was applied at a rate of 300 lbs/acre with a Nitrogen (N) -Phosphorous (P) - Potassium (K) analysis of 20-20-10. The final application of fertilizer was broadcast on 113 acres in 2014. The vegetation, natural reinvasion and applied is successfully mitigating erosion a precursor to establishing post-mining land use.

The 2015 annual inspection included reviewing areas that have historically subsided, and some erosion issues due to the 2014 summer's record rainfall. These issues will be remediated during the 2016 construction season. The reoccurring subsidence cracks covering 4.6 acres of the Hindenburg waste rock dump have slowed down, and FGMI will continue to monitor and regrade when necessary.

The easement section of ADNR performed an onsite review of the designated RS2477 trail system that was reestablished during reclamation. There are very minor activities that will need to be completed prior to the States acceptance. FGMI will continue to work with ADNR in 2016 to finalize the trail system.

Table 5: Reclamation Work Completed at True North

Area	Graded (acre)	Growth Media Placement (acre)	Scarified (acre)	Seeded and Fertilized (acre)
<b>Dumps</b>				
East Pit Dump	47.5	-	47.5	47.5
Zep and Hindenburg Dump	86.3	-	86.3	86.3
Spruce Creek (within Zep&Hind dump footprint)	10	-	10	10
Mid Shepard Dump	16.28	14.2	14.2	14.2
South Shepard Dump	68.6	-	68.6	68.6
North Shepard Dump	21.3	-	21.3	21.3
East Shepard Dump	4.2	4.2	4.2	8.9
Hindenburg Dump	8.5	-	8.5	8.5
North Central Dump	13.1	-	13.1	13.1
North Louis Dump	17.7	-	17.7	17.7
South Louis Dump	19.2	-	19.2	19.2
Lower AB Dump	13.6	13.6	13.6	13.6
Upper Louis Dump	16.4	-	16.4	16.4
<b>Pits</b>				
Hindenburg Pit	32.4	32.4	32.4	32.4
North Central Pit	12.3	12.3	12.3	12.3
Shepard Pit	38.5	38.5	38.5	38.5
<b>Stockpads</b>				
Upper A Stockpad	5.6	5.6	5.6	5.6
Upper B Stockpad	1.5	1.5	1.5	1.5
<b>Roads</b>				
Louis Road (with-in Louis Dump)	5.7	-	5.7	5.7
ANFO Pad / Explosives Road	16.4	16.4	16.4	16.4
Shop Pad	21.4	-	21.4	21.4
<b>Growth Media</b>				
Shop Pad Growth Media	2.3	-	2.3	2.3
East Pit Growth Media	3	-	3	3
Hindenburg Growth Media	2.2	-	2.2	2.2
<b>Total</b>	<b>483.98</b>	<b>138.7</b>	<b>481.9</b>	<b>486.6</b>

## 12. FINANCIAL ASSURANCE

As required by ADNR, ADEC and ACOE, the financial assurance amounts were revised and updated to reflect current plans for Fort Knox and True North. The new financial assurance amounts approved by the agencies in 2015 are \$96,164,867 for Fort Knox and \$620,336 for True

North. The financial assurance letter of credit (Irrevocable Standby Letter of Credit No. S18572/260177, Amendment No. 7) was accepted by ADNR on August 26, 2015. Table 6 reflects the financial assurance for Fort Knox and True North.

Table 6: Financial Assurance Amounts

<b>Plan/Permit/Lease #</b>	<b>Amount (\$)</b>
Fort Knox Reclamation and Closure Plan	\$96,164,867
True North Reclamation and Closure Plan	\$ 620,336
<b><i>Total</i></b>	<b><i>\$96,785,203</i></b>

### 13. MINE WATER USEAGE (WATER BALANCE)

The Fort Knox water balance tracks water movement throughout the mine-site, including natural processes such as precipitation, evaporation, and seepage as well as mine operation water needs. The water balance that Fort Knox uses was built by a contractor using GoldSim software. GoldSim is a graphical simulation software that facilitates the construction of complex models allowing FGMI to predict future water conditions.

The Fort Knox water balance focuses on mining and milling activities and is calibrated relative to measured bathymetric data on a quarterly basis. In this way, confidence in predictive values increases the longer the model is operated and mine planning and the closure design may be continually optimized. Data used in calibration activities includes: tailing pond water levels, tailing pond bathymetry, seepage and interception rates, precipitation and evaporation records, dewatering pumping schedules, production data, mill water flows, tailings deposition schedules, and information on mine process changes.

The water balance is continually updated with the most current information, including natural water inflows/outflows and water use throughout the mine-site. The dynamic nature of the water balance enables FGMI to actively manage water on site, with the goal of minimizing water use and maximizing efficiency. Water uses at Fort Knox are summarized in Table 7.

Table 7: Fort Knox Water Summary for 2015

<b>Water Summary</b>	<b>Volume (acre-ft/year)</b>
Fresh Water Reservoir (WSR) to Mill	37.2
Fresh Water Reservoir (WSR) to TSF	0
TSF to Mill	14,789
Mill to TSF (Estimated water in tailings slurry)	11,335
Heap Leach	0 (relative to TSF)
Pit Dewater to TSF	3,162
Seepage Reclaim	3,188

## 14. EXPLORATION

FGMI continues with an exploration program in the pit and in the surrounding area with the goal of identifying additional reserves that can further expand the existing pit or lead to development of another operation. Exploration in the vicinity of the Fort Knox mine in 2015 consisted of the following:

- **Gil Project**  
The following baseline studies were initiated or continued during 2015:
  - Meteorological monitoring;
  - Geochemical characterization & preliminary ML/ARD potential;
  - Surface water monitoring (14 sites);
  - Groundwater monitoring (5 wells and 3 piezometers); and
  - Subsurface temperature logging (2 borehole TACs).

In 2016, FGMI plans to continue monitoring at the Gil Project.



- **Gilmore Project**  
In 2014, the Bureau of Land Management (BLM) issued Land Use Permit Number FF096399 to Fort Knox that allows mineral assessment of lands withdrawn from mineral entry (PLO 3708) immediately west of the Fort Knox Mine. In 2015, FGMI continued the ongoing mineral assessment and initiated several environmental baseline studies. The following studies were initialized or completed in 2015:
  - Phase 2 cultural resources study;
  - Geochemical characterization;
  - Meteorological monitoring;
  - Noise study;
  - Visual study;
  - Groundwater monitoring;
  - Surface water monitoring;
  - Aquatic life study; and
  - Wetlands delineation.

In 2016, FGMI anticipates continuing exploration drilling and environmental baseline assessments at the Gilmore Project.

## 15. COMMUNITY AFFAIRS

### FORT KNOX EXTERNAL STAKEHOLDER FEEDBACK PROCEDURE

Stakeholder feedback, be it positive or negative, is instrumental in providing Fort Knox with a platform upon which its operational and social performance can be regularly evaluated and modified to meet commitments to leading practice and continuance improvement. The objective of our procedure is to outline Fort Knox's commitment to demonstrate a transparent and

trustworthy approach to issues management and to ensure that stakeholders can effectively communicate with Fort Knox.

External stakeholder feedback should be directed to the External Affairs Manager, Anna Atchison (907-490-2218) who serves as the primary site point of contact, working closely with the General Manager and appropriate department managers to monitor.

### COMMUNITY COMMITMENT

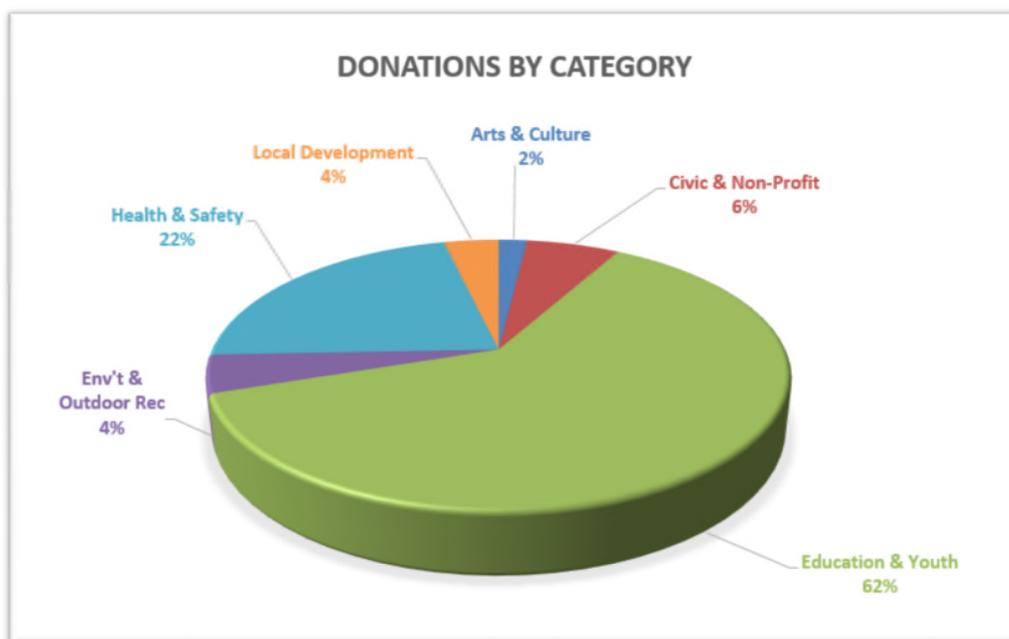
Fort Knox's commitment to the community in 2015 was demonstrated by its employees donating over 4,000 hours of recorded volunteer service to Fairbanks area organizations. These hours included Fort Knox sponsored events, activities supporting local organizations, and employees who volunteer their own personal time to area organizations.



### COMMUNITY INVESTMENT

Fort Knox showed further commitment to the Fairbanks community by donating to 99 area non-profit organizations throughout 2015. This included funding of the second \$1 million dollar commitment to the University of Alaska Fairbanks. Donations are summarized in Figure 10.

Figure 10: Fort Knox 2015 Donations



## COMMUNITY ENGAGEMENT



Mine tours are an important part of our community engagement. In 2015 Fort Knox provided tours to 644 local students, and 250 visitors signed up for community tours of the mine. The community tours were conducted through a partnership with the Fairbanks Community Food Bank.

