



2012 ANNUAL REPORT

QUARTZ MINING LICENCE QML-0009

March 2013

Prepared for:

YUKON GOVERNMENT - ENERGY, MINES AND RESOURCES

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TABLE OF CONTENTS

1 INTRODUCTION..... 1

1.1 LOCATION1

2 MINING ACTIVITIES 5

2.1 MINE SITES..... 5

2.1.1 BELLEKENO 5

2.1.2 LUCKY QUEEN 6

2.1.3 ONEK 990..... 6

2.2 LIFE OF MINE AND RESERVES 7

2.3 MINING METHODOLOGY 8

2.3.1 BELLEKENO 8

2.3.2 LUCKY QUEEN 8

2.3.3 ONEK 990..... 8

2.4 PROPOSED DEVELOPMENT..... 9

2.4.1 BELLEKENO 9

2.4.2 LUCKY QUEEN 9

2.4.3 ONEK 990..... 9

3 CONSTRUCTION ACTIVITIES 10

3.1 ROAD CONSTRUCTION 10

3.2 MILL SITE CONSTRUCTION 10

3.3 MINE SITE CONSTRUCTION 11

3.4 ELSA CAMP FACILITIES 11

3.5 ANNUAL INSPECTION 12

3.6 UPCOMING MAINTENANCE AND UPGRADES..... 13

3.6.1 MILL UPGRADES AND MAINTENANCE 13

3.6.2 MINE UPGRADES AND MAINTENANCE 13

4 MILLING OPERATIONS 15

4.1 PRODUCTION 15

5 WASTE MANAGEMENT 16

5.1 TAILINGS MANAGEMENT 16

5.1.1 TAILINGS HANDLING 16

5.1.2 DRY STACK TAILINGS DISPOSAL PROCEDURE 16

5.1.3 TAILINGS CHARACTERIZATION 17

5.2 WASTE ROCK MANAGEMENT..... 17

5.2.1 TONNAGES	17
5.2.2 STORAGE LOCATION	18
5.2.3 WASTE ROCK MONITORING AND QA/QC	18
5.2.4 MINE WALL MONITORING	19
5.2.5 HUMIDITY CELL AND GEOCHEMICAL TESTS.....	19
6 MONITORING.....	20
6.1 MONITORING AND SURVEILLANCE PLAN	20
6.1.1 WATER QUALITY SURVEILLANCE NETWORK.....	20
6.1.2 GROUNDWATER SURVEILLANCE NETWORK	20
6.1.3 PERMAFROST MONITORING.....	24
6.1.4 PHYSICAL INSPECTIONS	24
6.1.5 METEOROLOGICAL MONITORING	24
6.1.6 NOISE IMPACTS AND SOUND MONITORING.....	24
6.1.7 DUST ABATEMENT AND MONITORING	25
6.1.8 WASTE ROCK MONITORING.....	27
6.1.9 ENVIRONMENTAL EFFECTS MONITORING.....	27
6.1.10 WILDLIFE MONITORING PLAN	27
6.1.11 TRAFFIC MANAGEMENT	28
6.2 ADAPTIVE MANAGEMENT PLAN.....	32
7 UNAUTHORIZED DISCHARGE	33
7.1 REPORTABLE SPILLS.....	33
7.1.1 NON-REPORTABLE SPILLS	33
7.2 PERMIT EXCEEDENCES	33
8 CARE AND MAINTENANCE AND RECLAMATION	34
8.1 CARE AND MAINTENANCE ACTIVITIES	34
8.2 RECLAMATION ACTIVITIES.....	34

LIST OF TABLES

Table 2-1 Consolidated Mineral Resource Statement* – November 9, 2009 7
 Table 3-1 2012 Annual Physical Inspection of Surface Structure Action Items 12
 Table 3-2 2012 Annual Physical Inspection of Underground Working Action Items..... 13
 Table 4-1 Keno Hill Operations 2012 Productions Statistics..... 15
 Table 4-2 Production Statistics 2010 to 2012 (tonnes) 15
 Table 5-1 2012 DSTF Volume Summary..... 17
 Table 5-2 Keno Hill 2010 Mine Waste Rock Statistics..... 18
 Table 6-1 Estimated Traffic through Keno City during Development – Lucky Queen and Onek 990 Mines 28

LIST OF FIGURES

Figure 1-1 General Location Map 2
 Figure 1-2 Regional Location Map 3
 Figure 1-3 Bellekeno Mine and Mill Site Plan 4
 Figure 2-1 Bellekeno 2012 Development 5
 Figure 2-2 Lucky Queen Mine 2012 Development 6
 Figure 6-1 QZ09-092 Surface Monitoring Locations 21
 Figure 6-2 QZ09-092 Groundwater Monitoring Locations – Mill Area 22
 Figure 6-3 QZ09-092 Groundwater Monitoring Locations 23
 Figure 6-4 Dust Monitoring and Weather Station Location 26
 Figure 6-5 Bellekeno Access Routes 29
 Figure 6-6 Lucky Queen, Onek 990, Bellekeno Access Routes 30

LIST OF APPENDICES

- APPENDIX A BELLEKENO MINE SITE LAYOUT AS-BUILT DRAWING (2012)
- APPENDIX B BELLEKENO UNDERGROUND MINE AS-BUILT DRAWING (2012)
- APPENDIX C LUCKY QUEEN SITE LAYOUT AS-BUILT DRAWING (2012)
- APPENDIX D LUCKY QUEEN UNDERGROUND MINE AS-BUILT DRAWING (2012)
- APPENDIX E AKHM 2012 POST SEASON ANNUAL REPORT MLU LQ00240
- APPENDIX F ONEK 990 SITE AS-BUILT DRAWING (2012)
- APPENDIX G ONEK 990 UNDERGROUND AS-BUILT DRAWING (2012)
- APPENDIX H BELLEKENO PRODUCTION SCHEDULE 43-101
- APPENDIX I DISTRICT MILL SITE LAYOUT AS-BUILT DRAWING (2012)
- APPENDIX J DSTF AS-BUILT DRAWING (2012)
- APPENDIX K DSTF GTC INSTALLATION, EBA
- APPENDIX L 2012 TAILINGS CENTER LINE TESTING MEMO, EBA
- APPENDIX M 2012 ANNUAL PHYSICAL INSPECTION
- APPENDIX N DSTF RISK ASSESSMENT STABILITY MODEL UPDATE, EBA
- APPENDIX O QZ09-092 2012 TAILINGS CHARACTERIZATION PLAN REPORTING
- APPENDIX P 2012 WASTE ROCK MANAGEMENT PLAN REPORT
- APPENDIX Q 2012 MINE WALL TESTING PLAN REPORT
- APPENDIX R DSTF MONITORING MEMOS, EBA
- APPENDIX S 2012 DUST MONITORING RESULTS
- APPENDIX T BELLEKENO MINE ENVIRONMENTAL EFFECTS MONITORING CYCLE 1 INTERPRETIVE REPORT
- APPENDIX U WILDLIFE REPORT BY CONSERVATION OFFICER
- APPENDIX V 2012 TRAFFIC LOG
- APPENDIX W 2012 REPORTABLE SPILL REPORT
- APPENDIX X 2012 NON-REPORTABLE SPILLS
- APPENDIX Y 2012 NON-COMPLIANT TREATMENT EVENTS
- APPENDIX Z 2012 DSTF PROGRESSIVE RECLAMATION MEMO, ACCESS CONSULTING GROUP

1 INTRODUCTION

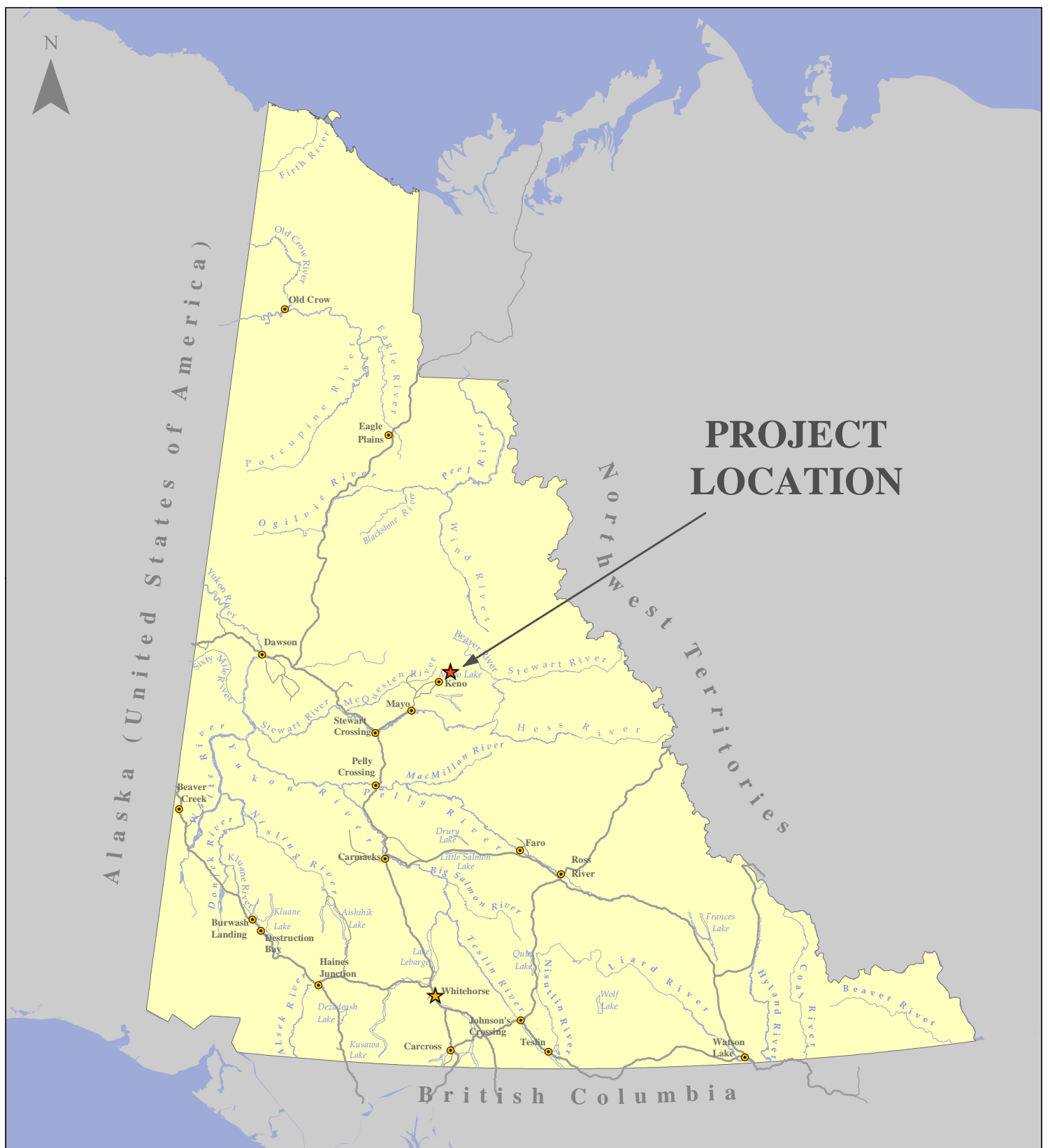
Alexco Keno Hill Mining Corp. (AKHM) was issued Quartz Mining License (QML) QML-0009 on November 17th, 2009. A request for amendment of this License to include mining activities at the Lucky Queen and Onek 990 Mines was submitted in 2012 and approved January 13, 2013. Prior to this, letters of approval for preliminary development of the Onek 990 and Lucky Queen Mines were received in November 2012.

On August 20th, 2010, type A Water Licence QZ09-092 was issued to Alexco Keno Hill Mining Corp. for operation of the Bellekeno Mine and Mill. Subsequently, on September 7th, 2010, the Bellekeno Mine became a “mine under development” as defined in subsection 1(1) and subsection 1(2) of the federal Metal Mining Effluent Regulations. AKHM has submitted an application (QZ12-053) to amend Water Licence QZ09-092 to similarly include the Lucky Queen and Onek 990 Mines. This application is currently under review with the Water Board.

This report serves to fulfill the reporting requirements of the QML as defined under paragraphs 12.5 of QML-0009 and Section 14.0 of the Monitoring and Surveillance Plan.

1.1 LOCATION

The Bellekeno Mine, owned and operated by Alexco Keno Hill Mining Corp. (AKHM), is located in the vicinity of Keno City (63° 55'N, 135° 29'W), in central Yukon, 354 km (by air) due north of Whitehorse. Access to the property is via a paved, two-lane highway from Whitehorse to Mayo (407 km) and an all-weather gravel road northeast from Mayo to Elsa (45 km); a total distance of 452 km. The property lies along the broad McQuesten River valley with three prominent hills to the south of the valley. Figure 1-1 shows the general project location within Yukon while Figure 1-2 shows the location on a smaller scale. The Bellekeno area is located about 3 km east of Keno City, while the Keno Hill District Mill site is about 1.2 km to the west (Figure 1-3).



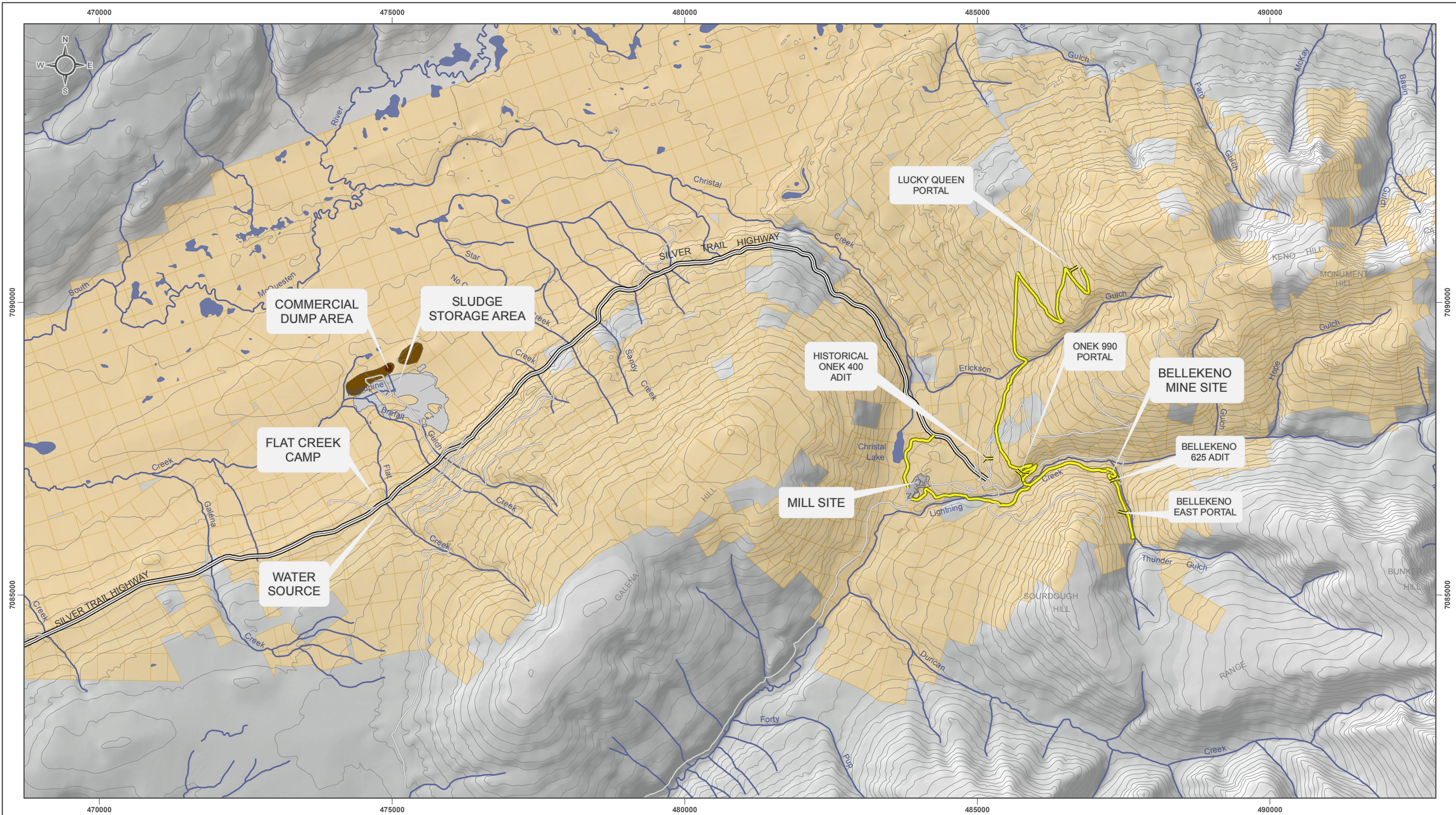
ALEXCO KENO HILL MINING CORP.

2012 ANNUAL REPORT

FIGURE 1-1

PROJECT LOCATION MAP





National Topographic Data Base (NTDB) compiled by Natural Resources Canada at a scale of 1:50,000. Cadastral data compiled by Natural Resources Canada. Reproduced under license from Her Majesty the Queen in Right of Canada, Department of Natural Resources Canada. All rights reserved. Quartz claim boundaries and ownership current as of February 24th, 2011. Data source: <http://geomatics.yukon.ca>.

Datum: NAD 83; Map Projection: UTM Zone 8N

1:60,000 (when printed on 11 x 17 inch paper)

0 0.5 1 2 3 Kilometers

Adit	Silver Trail Highway	100 meter contour
Alexco Quartz Claims	Haul Road	Watercourse
	Local	Waterbody

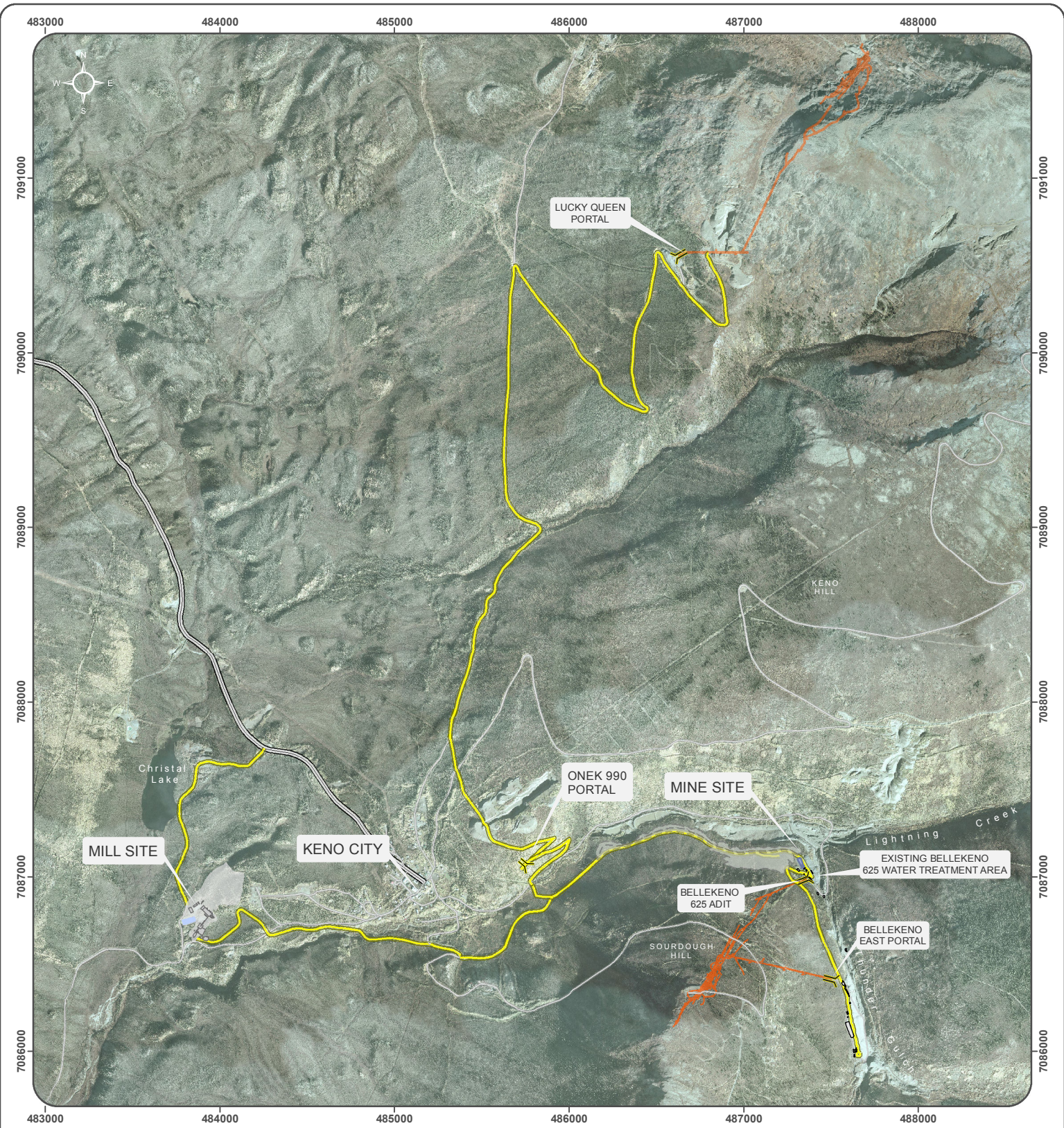


2012 ANNUAL QUARTZ MINING LICENCE REPORT, QML-0009

**FIGURE 1-2
KENO HILL PROPERTY LOCATION MAP**

FEBRUARY 2013

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FIGURE 1-3 BELLEKENO LOCATION MAP



FEBRUARY 2013

Aerial photograph obtained from Geodesy Remote Sensing Inc., Calgary Alberta. Imagery acquired September 13 and 14 2006.
Datum: NAD 83; Map Projection: UTM Zone 8N

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2 MINING ACTIVITIES

2.1 MINE SITES

2.1.1 Bellekeno

Underground development at Bellekeno continued throughout the entire year in 2012 and will continue in 2013, focusing mainly in the Southwest, 99 and also BK East Zone of the mine. The majority of development consisted of production mining of the Bellekeno ore body, specifically the SW and 99 Zone. In 2013 the CAPEX development will be sustained in these zones in addition to, the development of the BK East ore zone. The waste rock development in 2012 focused on additional stope access within the Southwest and 99 zone as well as minor long term infrastructure development. The SW Main Ramp was extended down to the 930 and 960 levels for access to the lowest portion of the mine. Exploration drifting to the south of the known resources is continuing along what is termed the “Thunder Zone”. There were no temporary or permanent closures or stability issues that occurred in 2012. As-builts drawings for both the site layout and underground workings can be seen in Appendix A and B, respectively. Figure 2-1 shows an isometric view looking down to the North East direction of all new development for 2012 in red.

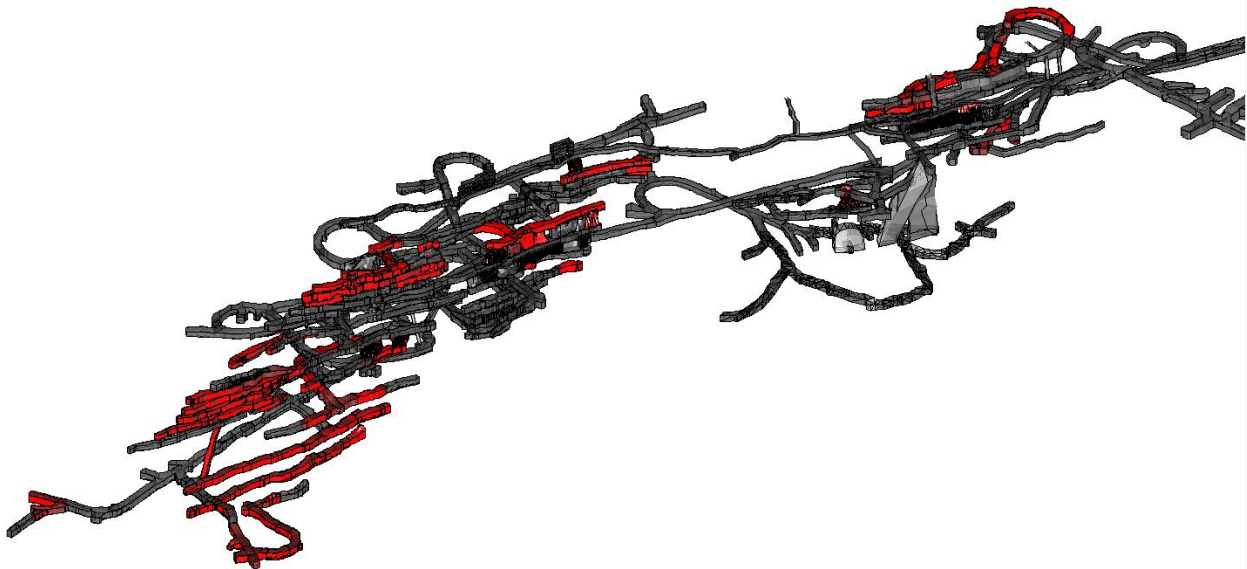


Figure 2-1 Bellekeno 2012 Development

Production activities were carried out in accordance with the Operation Plans submitted as per paragraph 11.1 of QML-0009, and as described in the Project Description of Water License Application QZ09-092.

2.1.2 Lucky Queen

Underground rehab at Lucky Queen (LQ) continued throughout the entire year in 2012 and new CAPEX development was initiated in Q4 2012 and will continue in 2013 with a brief hiatus and re-evaluation of the project. Currently the project is on hold until approximately July/August 2013.

There were no issues in regards to stability or permanent closures. Preliminary activities for the Lucky Queen Mine were approved under the current QML-0009 on November 30, 2012. As-builts for both the site layout and underground workings can be seen in Appendix C and D, respectively. Figure 2-2 shows an isometric view of all new development for 2012 at Lucky Queen in red.

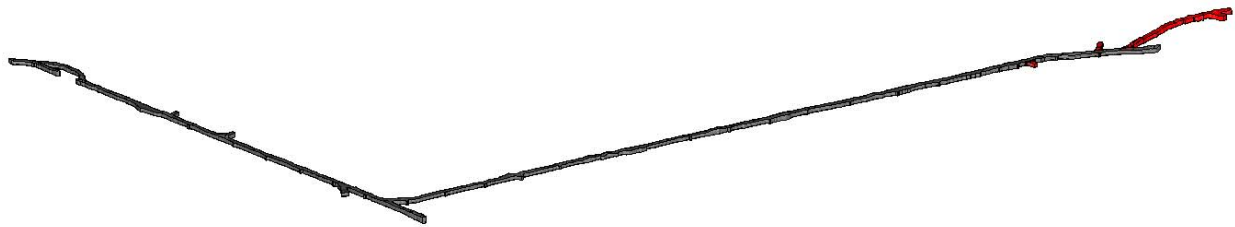


Figure 2-2 Lucky Queen Mine 2012 Development

2.1.3 Onek 990

As discussed in the 2012 Pre-Season Summary Report submitted in March 2012, a new portal was to be prepared west of the historical Onek pit called Sign Post Portal. This development proceeded, however following continued community consultation, a new portal location, Onek 990, was found to be more suitable. The Onek 990 portal site is located near Lightning Creek. All information regarding the Sign Post Portal was submitted as part of Quartz Mining Land Use Class IV Operating Permit LQ00240 2012 Post Season Report attached in Appendix E.

New infrastructure for the Onek 990 portal began in August and included 2 km of road building, site preparation, portal preparation, and was 80% complete by the end of 2012. CAPEX development was initiated and will continue into 2013 and beyond. The Onek 990 portal pad includes a temporary office/dry, shop, compressor and generator shed, several out building. A lay down area on the historic Onek waste rock dump is also being used. A bridge final detailed design has been submitted, permitted and ready to construct to connect the Onek connector road into the BK Haul road. Preliminary activities for the Onek 990 Mine were approved under the current QML-0009 on November 9, 2012. There were no temporary or permanent

closures or stability issues that occurred in 2012. As-builts for both the site layout and underground workings can be seen in Appendix F and Appendix G, respectively.

2.2 LIFE OF MINE AND RESERVES

The Bellekeno Project Updated Preliminary Economic Assessment (PEA) Technical Report (NI 43-101) was prepared for Alexco Resource Corp. (Alexco) by Wardrop Engineering Inc. (Wardrop), and SRK Consulting (Canada) Inc. (SRK) to provide a detailed overview of the economic potential of extracting and processing mineralized material from the Bellekeno polymetallic deposits.

This report, released in November 2009, is currently being updated, however is not complete at this time. Until this report is updated for official release, known ore reserves, resources and life of mine are as stated in the 2009 NI 43-101.

The resource estimate was prepared by SRK Consulting (Canada) Inc. and signed off internally by Mr. Stan Dodd, P.Geo. V.P. Exploration, Alexco Resource Corp. Mr. Dodd is a Qualified Person as defined in National Instrument 43-101. The mineral resources for the Bellekeno project were estimated in conformity with generally accepted CIM “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines and are reported in accordance with Canadian Securities Administrators’ National Instrument 43-101.

Using an NSR cut-off of \$185/t, mineral resources for the Bellekeno Southwest, 99, and East zones are listed in Table 2-1. The majority of the resources are classified as Indicated Mineral Resources following the CIM Definition Standards for Mineral Resources and Mineral Reserves (December 2005) guidelines. The lower East Zone resource remains as Inferred Mineral Resources.

Table 2-1 Consolidated Mineral Resource Statement* – November 9, 2009

Category	Zone	Tonnes	Ag (g/t)	Pb (%)	Zn (%)	Au (g/t)
Indicated	Southwest†	215,800	997	12.6	7.2	0.662
Indicated	99†	91,700	995	7.5	4.2	0.293
Indicated	East‡	93,500	672	3.9	6.9	0.330
Total Indicated		401,000	921	9.4	6.5	0.500
Inferred	East‡	111,100	320	3.1	17.9	0.340
Total Inferred		111,100	320	3.1	17.9	0.340

* Mineral resources are not mineral reserves and do not have demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates.

† Reported at an NSR cut-off of \$185/t using metal prices of US\$15.25/oz. Ag, US\$0.675/lb. Pb, and US\$0.80/lb. Zn. Ag and Zn grades not capped. Lead grades capped at 450,000 ppm. Metallurgical recoveries applied (see Section 16.0).

‡ Reported at an NSR cut-off of \$185/t using metal prices of US\$14.50/oz. Ag, US\$0.60/lb. Pb, and US\$0.90/lb. Zn. Ag and Zn grades not capped. Lead grades capped at 450,000 ppm. Metallurgical recoveries applied (see Section 16.0).

Based on the current updated mineral resource estimate (Alexco October 2009) the LOM production schedule is shown in Appendix H.

2.3 MINING METHODOLOGY

2.3.1 Bellekeno

The Bellekeno project is comprised of one primary vein, the 48 vein, a subsidiary structure, the 49 vein and at least 9 other ancillary structures present in the Southwest, 99, and East zones. Most of the historical mining (totaling approximately 400,000 t) at Bellekeno occurred on the 48 vein in the 99 zone, intermittently between the 1950's and mid 1980's. The veins have variable dip, strike, and thickness. Dips range from 60° to 80° to the east or west. The average strike direction is approximately 030 azimuth. Vein thickness varies from a few centimeters to several meters in an apparent "shoot-like" configuration.

Based on the geotechnical and physical characteristics of the veins, a mining method review was conducted and cut-and-fill mining methods have been selected as the most appropriate for Bellekeno. Cut-and-fill and shrinkage stopping methods typically offer a high degree of selectivity that generally translates into high mineralization extraction and low waste dilution. Significant geotechnical study and design has been completed by SRK and a ground control management plan has been developed to address potential unstable ground conditions encountered in the vein material.

Backfill of mined out stopes is being accomplished through cemented rock and tailings fill. A portion of filtered tailings from the mill process were backhauled underground and used as backfill on an as-required basis. A total of 8,420 tonnes of tailings was used as backfill in 2012. The Paste Backfill plant construction, installation and commissioning was delayed due to additional underground excavation required to support the plant thus requiring additional and increased specialized ground support. Due to the difficulties encountered with the paste backfill plant, tailings were placed using both direct and cemented backfill techniques.

2.3.2 Lucky Queen

The Lucky Queen Mine is to be considered a conventional mechanized operation. LHD's and Trucks will be used for the movement of waste and ore to designated areas. Jumbo drills, longtom's, stoper's and jacklegs will be used in the extraction of the waste drifts and the ore. In the initial stages of mine development the footwall extraction drift complete with secondary drifts (shop, sumps, remucks and safety bays) will be driven to establish an ore pass above the 500 level drift. The extraction drift will then continue to the first intersection of the vein. All ground support in the extraction drift and secondary headings will be installed as per the ground support standards in Section 6.6 of the Mine Development and Operations Plan. During the extraction of ore, the ground conditions will be accessed and a mining method chosen. It is expected that the following three methods of mining will be considered.

- Conventional Cut and Fill – Jackleg, stopers and slushers;
- Mechanized Cut and Fill – Jumbo and LHD; and
- Longhole Stopping.

2.3.3 Onek 990

The Onek 990 Mine is to be considered a mechanized operation. Jumbo drills, Maclean bolter and jacklegs will be used in the extraction of the waste drifts and the ore. In the initial stages of mine development the

hangingwall extraction drift will be driven to intersect the vein at the 970 elevation. All secondary drifts will be driven at this time (ore and waste remucks, sumps, ramp collars to sublevels 2 and 3). All ground support in the extraction drift and secondary headings will be installed as per the ground support standards in Section 6.6 of the Mine Development and Operations Plan.

LHD's and Trucks will be used for the movement of waste and ore to designated remucks. The material will then be hauled with haul trucks to designated areas on surface or to the mill. During the extraction of the vein bulk sample, the ground conditions will be accessed and a mining method chosen. It is expected that the following two methods of mining will be considered.

- Mechanized Cut and Fill – Jumbo and LHD;
- Longhole Stopping.

2.4 PROPOSED DEVELOPMENT

2.4.1 Bellekeno

Proposed 2013 sustaining production development at the Bellekeno mine is focused in the SW, 99, BK East (625) and the new Thunder Zone in the mine. In addition, exploration drifting is budgeted south and above of known resources and where surface drilling and underground drilling has indicated mineralization of similar tenor to the Southwest zone. Once drifting is complete underground exploration drilling will commence in anticipation of adding additional inventory to the known resource. Along with development mine services, power and ventilation will follow the advance in multiple headings.

The 650, 931 Exploration Ramps continue into 2013 and the 99-555 /545 inclines continue in the central 99 zone with intent to extract 99 zone ore. The BK East zone (625) development is scheduled in 2013 and initial setup is being conducted, with mine development scheduled to start at the end of March 2013.

Commercial production at the Bellekeno Mine and District Mill continued throughout the year and the 2013 plan shows increasing production from 250 ton/day to 400 tpd in the 2nd quarter (QTR). Production mining has occurred within the Southwest & 99 Zone using conventional overhand cut and fill mining and longhole retreat.

2.4.2 Lucky Queen

Lucky Queen development will continue in 2013 with in excess of 330m of incline developed to the heart of the Lucky Queen ore zone. In addition a 200m raise is scheduled to be completed in the 3rd QTR (2013) to provide second escape and ventilation. Limited diamond drilling will be done throughout the year.

2.4.3 Onek 990

Onek 990 decline development was initiated in 2012 and Mine development will continue in 2013 with the eventual extraction of ore. Planned development in 2013 will be in excess of 400m and includes a raise driven to surface for secondary escape and ventilation prior to initiation of production. Also underground diamond drilling is planned in the 1st quarter of 2013. A bridge crossing the Lightning Creek drainage is scheduled to be installed by the end of the 1st quarter as well. Most of the road work has been completed for the project.

3 CONSTRUCTION ACTIVITIES

Construction activities carried out at the Keno Hill Silver District Site involved both at surface and underground. As-built drawings for these construction areas can be seen in Appendices A through H. These as-built drawings include the Bellekeno Mine, Lucky Queen Mine, Onek Mine, Mill Site Layout, and updated Dry Stack Tailings Facility.

In accordance with our efforts to minimize the impact of the construction activities on the residents of Keno City, the majority of construction materials were delivered using the Christal Lake road to bypass Keno City.

3.1 ROAD CONSTRUCTION

Road improvements and widening took place to access the new Onek 990 portal in accordance with Occupational Health and Safety Guidelines. The new Onek Connector Road was developed from the Wernecke Road, crossing Sign Post Road, along the historic Onek waste rock storage area, to the Onek 990 Portal crossing Lightning Creek Road.

An application to amend Type B Water License MS10-029 and include a new bridge over Lightning Creek near the Onek 990 portal was approved on Dec 20, 2012 and supersedes MS10-029 with MS12-059. Construction design drawings for this bridge were submitted in March 2013 with construction expected to begin in April 2013.

Once construction of the Onek Access Bridge across Lightning Creek to the Bellekeno Haul Road is complete in 2013, traffic will continue along this route (Figure 6-6). The Bypass Road will be approximately 2.1 km long and 6 – 9 m wide to safely accommodate passing vehicles. The road maybe restricted to one-way travel where conditions prevent construction to 9 m wide.

No major upgrades occurred on the roads to Lucky Queen, Christal Lake Road, Keno City Bypass to BKR, or the BKR haul road in 2012. Standard maintenance occurred throughout the year.

3.2 MILL SITE CONSTRUCTION

Construction of a conventional flotation mill at the historic Flame and Moth Site for processing ore and producing concentrate began in February of 2010 and was completed in July 2011. As-built drawings for this construction were submitted as part of the 2011 QML Annual Report.

The mill yard continues to be ditched and contoured to facilitate channeling melt water in the spring to sediment basins. Organics were consolidated and contoured to allow vegetation to take over and provide a central location for organics borrow source once reclamation begins. An updated mill site as-built can be seen in Appendix I.

3.2.1 Dry Stack Tailings Facility

The lined area of the dry stack tailings was increased from 6739 m² to 14,148 m² in 2012. Additional area was cleared and prepared for liner which will be laid in 2013, giving a total area of 10,982 m² available for additional tailings placement. See Appendix J for the DSTF as-built.

Both a ground temperature cable (GTC) and a shallow monitoring well were installed in the lower bench of the Dry Stack Tailings Facility (DSTF) as part of the ongoing monitoring of the DSTF. No water was seen during these installations, indicating no free water exists within the pile. Details of this installation can be seen in Appendix K.

In partial fulfillment of the QZ09-092 Water Licence, samples were also collected and analyzed for particle size and moisture content testing over the full depth of the tailings pile. The drill program and subsequent laboratory testing confirmed the placed tailings have physical properties consistent with design assumptions. Details can be seen in Appendix L.

3.3 MINE SITE CONSTRUCTION

Development of the Bellekeno deposit is the first of potentially many Mines in the Keno Hill Silver District. Because the Bellekeno Mine involved the reopening of existing historical underground mine, use of existing infrastructure such as water treatment facilities, the reuse of the previously impacted historic Flame and Moth site and the Christal Lake haul road, 'new' environmental footprint is limited in scope. See Appendix A for the as-built of overview of the Bellekeno Mine site, as well as Fig 1-3 Bellekeno Location Map.

No significant changes occurred at Bellekeno Mine in 2012. Minor activities included the addition of a seacan containing an ion exchange unit for the treatment of ammonia. Details can be seen in Appendix B of the QZ09-092 2012 Annual Report, which is available on the Yukon Water Board's online registry Waterline (www.yukonwaterboard.ca/waterline).

3.4 ELSA CAMP FACILITIES

A trailer camp, kitchen facility and drillers dry are currently assembled at the old Flat Creek town site (part of Elsa) on Surface Lease 105M13-001. The Camp has a total capacity of 90 permanent beds. During peak construction season, temporary bunks are brought in to allow for another 20 personnel in double bunk rooms. These bunks are not occupied during the winter. There are 4 houses located on Surface Lease 105M13-009 with a total of 28 rooms. On the same lease, an additional 20 rooms are available however this bunkhouse is also not occupied during the winter. These bunks were upgraded to include new framing, roof, and deck.

A Commercial Dump Permit # 81-012 is currently held from YG Environment in accordance with the Environment Act Solid Waste Regulations as well as the Public Health and Safety Act. This permit was renewed effective January 1, 2012 will continue to be used in support of the Bellekeno Mine operation. In compliance with this permit upgrades to the location of solid waste disposal included upgrades to the electric bear fence and addition of a cattle guard to prevent animals from entering the facility.

Alexco currently holds two (2) sewage disposal system permits at Elsa issued by YG Environmental Health Services: an absorption bed permit for the Flat Creek Camp (Permit #3448) in replacement to a septic tank

permit (Permit #3012) and an absorption permit for five houses (Permit #3449) in replacement of a septic tank permit (Permit #3246).

Water for camp consumption is being drawn from Flat Creek and treated through a series of filters and UV light before it is chlorinated and stored in holding tanks ready for consumption under the Yukon Environmental Health standards.

Power for the camp is supplied from the local grid that runs through Elsa to Keno City. Several upgrades were completed in 2012. Upgrades included:

- a) removal of the existing overhead line running from the historical pump house to the upper house complex at Elsa and replacing line with an armored tech cable.
- b) decommissioning of old transformers in the upper house complex area at Elsa and replacing with more current transformers and switchgear.
- c) brushing out of both the Onek 990 and Elsa substations
- d) commissioning an engineering overview of the current electrical system for the purpose of identifying areas needing upgrade in the 2013 season.
- e) installing new three phase transformer in camp to remove bunkhouse a from the kitchen complex and distribute the load more evenly
- f) installing new three phase transformer in the warehouse to distribute the load more effectively.
- g) Commissioning an Engineering overview of the power factor at the Mill for the purpose of identifying why the power factor is low and what can be done to correct it, designed a power factor correction unit.

3.5 ANNUAL INSPECTION

In accordance with Section 12.1 to 12.3 of Quartz Mining License (QML) QML-0009, an “annual inspection of the physical stability of all engineered structures, works and installations located at the site is conducted by an engineer by August 1st of each year”.

EBA Engineering Ltd. Was retained to complete the 2012 annual inspection of the surface engineered earth structures located throughout the Bellekeno Mine site. The mine and associated infrastructure was inspected by Senior Mining Engineer Darin Baker and stamped by Mine Manager, Scott Smith, P.Eng (Yukon).

Several items were identified in both the surface locations and the underground workings that required additional attention. All items identified were completed in, 2012 and are summarized in Table 3-1 and 3-2 below.

See Appendix M for a copy of the 2012 Annual Physical Inspection Report which includes both surface and underground inspections. See Appendix B for the 2012 updated Bellekeno Mine underground as-built.

Table 3-1 2012 Annual Physical Inspection of Surface Structure Action Items

Item Number	Location	Item	Date Completed
1	PAG Waste Storage Facility	Complete construction and properly anchor liner.	Completed for 2012-2013 forecasted storage requirements
2	LC Bridge Abutments	Place additional rip rap over remaining exposed geotextile on east bank.	28-Sept-2012
3	Mill Water Storage Pond	Complete anchoring of liner	30-Sept-2012
4	Mill Water Storage Pond	Install safety ropes or ladders.	Equipment arrives Oct-2012, installed within 30 days of arrival
5	DSTF	Repair cracks in south slope face.	13-Sept-2012

Table 3-2 2012 Annual Physical Inspection of Underground Working Action Items

Item Number	Location	Item	Date Completed
1	SW Main Ramp	Check scaling below central remuck	15-Oct-2012
2	7-48 N Intersection	Rehab required prior to development	30-Nov-2012
3	SW 820 VR bottom brow	Bagged screen to clear	15-Oct-2012
4	600 Incline Intersection	Pillar damage requires repair	30-Nov-2012
5	99-625 S Escape way	Bagged screen, brow to support. Shotcrete arch to place	15-Oct-2012
6	680 South	Rehab with 10' SWX and screen	15-Oct-2012

3.6 UPCOMING MAINTENANCE AND UPGRADES

Routine maintenance of Mine and Mill areas will continue in 2013.

3.6.1 Mill Upgrades and Maintenance

There are several projects that scheduled for improvement in 2013 for the Mill area. These upgrades include the addition of a mill maintenance shop, installation of a dust collection/suppression system at crusher, installation of septic system(s), and on-going construction of the DSTF footprint to meet design footprint.

3.6.2 Mine Upgrades and Maintenance

3.6.2.1 Bellekeno

Budgeted upgrade or maintenance work planned for the Bellekeno Mine consists of continued transitioning from dry to wet shotcrete for ground control purposes. Wet shotcrete will provide safer conditions, control ground and reduce industrial hygiene exposures at reduced costs.

The underground paste plant is being configured to batch wet shotcrete to facilitate the above. The mine will continue to use a mix of fill methods including cemented rock fill (CRF), cemented and un-cemented tails to reduce tailings on surface and reduce P-AML inventory.

Various ventilation upgrades have been completed during 2012 including driving a 2.4m x 2.4m raise from the bottom of the mine for second escape and fresh air. The mine installed a ventilation bulkhead and installed a new high pressure fan.

Leveling work was completed on the BKE shop and in Q1 2013 the BK 625 shop will be refurbished. Ongoing CAPEX development to access new areas of the BK ore body will continue

3.6.2.2 Lucky Queen

The Lucky Queen mine will primarily involve underground development and consist of main haulage and ore access development. In addition to this, a secondary escape and ventilation raise is planned.

Waste rock and PAML storage sites will also be constructed along with settling ponds.

3.6.2.3 Onek 990

Budgeted upgrades for the Onek 990 portal includes road construction, berm construction, signage and a new bridge over Lightning Creek to tie in haulage onto the BK haul road and thus minimize traffic the Keno city. Underground development will continue throughout the year and includes CAPEX mine development and production on the Onek vein. In addition a secondary ventilation/escape raise to surface will be constructed.

A PAML pad will be constructed on a previously permitted site above the Onek 990 portal. Materials laydown construction will be ongoing.

Included in the 2013 budget will be to construct a new power drop / transformer off the Onek grid to supply the Onek mine grid power.

Surface buildings including a shop, dry, genset and compressor house, water storage, explosive and cap magazines have or will be constructed throughout the year.

4 MILLING OPERATIONS

The Mill generally operated between daily rates of 250 to 400 tonnes per day during 2012 and an annual daily average of 253 tonnes per day.

The mill process employs conventional crushing, grinding, flotation, and dewatering processes. The primary valuable sulphides in the mill feed are recovered by conventional differential flotation with a cyanide-free zinc suppressing regime. Silver and lead minerals are recovered together to produce a silver-lead concentrate and zinc minerals with some silver value are recovered to a separate zinc concentrate.

Storage and disposal of mill tailings is done in the dry-stack tailings facility (DSTF) located adjacent to the mill or backfilled underground at the Bellekeno Mine. See Appendix J for as-built drawings of the DSTF.

4.1 PRODUCTION

Mill throughput for 2012 was 91,808 tonnes of ore at an average head grade of 767 ppm silver (Ag), 9.8% lead (Pb), and 5.0% zinc (Zn). The total lead concentrate produced was 10,999 dmt (dry metric tonnes) while the total zinc concentrate was 5,686 dmt. For a listing of production values see Table 4-1. The cumulative production statistics from 2010 to 2012 for N-AML, P-AML, ore and tailings are presented in Table 4-2.

Table 4-1 Keno Hill Operations 2012 Productions Statistics

Production	Amount Tonnes	Grade			Metal Quantity		
		Silver (g/t)	Lead (%)	Zinc (%)	Silver (gm)	Lead (t)	Zinc (t)
Bellekeno Mine Production	86,354	949	12.7%	5.4%	81,949,946	10,967	4,663
Keno Hill District Mill Throughput	91,808	767	9.8%	5.0%	70,389,961	8980	4560
Lead Concentrate Produced	12,999	4,757	61.8%	6.5%	61,830,465	8035	849
Zinc Concentrate Produced	5,686	433	4.1%	44.7%	2,463,200	234	2543
Tailing Produced (Backfill and DSTF)	73,124	83	1.0%	1.6%	6,096,296	712	1168

Table 4-2 Production Statistics 2010 to 2012 (tonnes)

	N-AML brought to Surface (used for construction only)	P-AML stored on surface for eventual backfill	Ore Mined	Tailings placed in DSTF	Tailings Backfilled
2010	48,824	1647	18,594	8,061	0
2011	4,553	2,059	71,992	61,033	2,088
2012	5,158	2,059	86,354	65,205	8,420
Total	58,535	2,059	176,940	134,299	10,508
QML Authorized Maximum	500,000	125,000	613,000	322,000	-

5 WASTE MANAGEMENT

5.1 TAILINGS MANAGEMENT

A detailed design of the Dry-Stacked Tailings Facility (DSTF) for the Keno Hill Mine site has been completed by EBA Engineering Ltd. and issued for review in March 2011. The report details additional information regarding all aspects of the DSTF and was submitted with the 2010 QML-0009 Annual Report Re-submission in June of 2011. An updated Expansion Design Report was issued for review in February 2013 and will be finalized in the coming months.

In addition to the DSTF expansion Alexco retained EBA Engineering Ltd. to update the parameters in the stability model previously used for design of the DSTF. The original DSTF was designed using a combination of measured and conservatively assumed design parameters.

In September 2012 Alexco, EBA, and The First Nation of Na-Cho Nyak Dun met to perform a risk assessment for the DSTF. As a result Alexco committed to have EBA review and update the parameters of the DSTF stability model based on data being collected during construction of the facility. A report was issued summarizing the updated parameters of the stability model, the data supporting the updates, and the resulting changes to factors of safety. This report can be seen in Appendix N.

5.1.1 Tailings Handling

The Tailings Management Plan was designed for a portion of the final flotation tailings to be stored on surface by dry stacking and a portion to be stored underground, as cemented or paste backfill. This design allows final flotation tailings to be used as backfill to provide support for the excavated underground voids and to reduce surface environmental impact.

The Keno Hill District Mill was originally designed to produce a Zinc Cleaner tailings (somewhat higher in pyrite) and a Zinc Rougher (somewhat lower in pyrite) product. This design was to allow for adaptive management in the event high pyrite ore material was encountered during mining. If an appreciable amount of pyrite was contained in the mill ore it would be substantially removed and report to the zinc cleaner scavenger tailings stream. This material could then be separated and stored underground as backfill.

No appreciable difference of pyrite has been encountered in the two pyrite streams since the mill was commissioned and consequently the mill is producing a single tailings product.

5.1.2 Dry Stack Tailings Disposal Procedure

Tailings are placed in 300 mm lifts and compacted with a 10-tonne vibratory compactor. Tailings are compacted to at least 95% of the maximum dry density using standards effort (as per American Society for Testing and Materials [ASTM] D698). The organic soils are left in place beneath the DSTF to provide some insulation and slow the rate of potential permafrost thaw.

Construction of the DSTF will occur over a five year period, as the tailings are generated by the mill. A total of 64,704 tonnes of tailings were placed in the DSTF in 2012 at a design 11% water retention volume (~6943 tonnes). Regular monitoring of the tailings placed on the DSTF has a moisture content of ~16%.

There were 8,420 tonnes of tailings taken underground in 2012 and used as backfill. Details can be seen in Table 5-1.

Table 5-1 2012 DSTF Volume Summary

Dry Stack Tailings Facility Tailings		
	Tonnes	11% H2O Ret. (t)
Tailing Produced	73,124	8,044
Tailings Backfilled UG	8,420	926
Total Tailings to DSTF	64,704	7,117

5.1.3 Tailings Characterization

The Tailings Characterization Plan was implemented to fulfill the conditions set out in Part H, Clauses 67 and 68 of Water Licence QZ09-092 issued to Alexco Keno Hill Mining Corp. on August 19th 2010.

The plan outlines the methodology that will be followed to both comply with the requirements of these clauses as well as provides geochemical characterization of tailings generated. The results are presented in the 2012 Tailings Characterization report included in the QZ09-092 2012 annual report attached as Appendix O.

5.2 WASTE ROCK MANAGEMENT

The Waste Rock Management Plan outlines practices for management of waste rock to be excavated during the Bellekeno Mine Development. The plan ensures that appropriate management procedures are followed during excavation activities in order to minimize impacts of stored rock to land and water resources. Monitoring following excavation activities is intended to assess the effectiveness of the management measures, ensure that adaptive management approaches are implemented and to ensure that appropriate information is obtained by Alexco to assist in closure planning. Detailed discussion of the 2012 WRMP results can be seen in Appendix P.

5.2.1 Tonnages

Development in the Bellekeno Mine generated an estimated 33,875 tonnes of excavated material which has been sampled, classified, and verified by lab analysis in 2012. Table 3 shows a breakdown of the material which lab analysis results have been received for. The total Non-AML waste generated in all of 2012 which has been verified by lab analysis was an estimated 20,613 tonnes, while the total P-AML waste generated in all of 2012 which has been verified by lab analysis was an estimated 4842 tonnes.

Table 5-2 Keno Hill 2010 Mine Waste Rock Statistics

Category	Tonnes	Storage Location	Tonnes
Non-AML Waste Rock (excavated)	20613	Surface	5,158
		BK PAG PAD	0
		U/G Storage	0
		U/G Backfill	15,455
P-AML Waste Rock (excavated)	4842	Surface	0
		BK PAG PAD	0
		U/G Storage	0
		U/G Backfill	4,842
Tailings (backfilled)	8420	Various	8,420
Total			33,875

5.2.2 Storage Location

Potentially acid-generating and/or metal leaching (P-AML) not suitable for general construction purposes was stored temporarily on the lined storage area near the Bellekeno mine portal area (See Appendix A) or stored underground in the Bellekeno mine below previous static water level (defined as the Bellekeno 625 portal elevation). As per the QML, the maximum storage of P-AML Waste Rock at surface is 125,000 tonnes. In 2012 no additional P-AML was placed on surface keeping the total to date 2,059 tonnes stored on surface in the lined temporary storage area, while 4,842 tonnes was stored underground.

Non-acid-generating and non-metal leaching waste rock was be used for general construction purposes and temporarily stored on the BK haul road at 625, by BK road marker 5 and on the mill side of the haul road bridge. All of this material is classified as road material or general construction material. A total of 5158 tonnes were stored on surface while 15,455 tonnes were underground.

The majority of non-AML waste rock from 2012 was used for construction material, any additional stockpiled waste rock will be used for construction in 2013. For a summary of this information see Table 5-2.

Construction of the Bellekeno Non-AML Waste Rock Deposit Area was not commenced during 2012. Prior to commencement of construction of the Non-AML WRDA, Alexco will conduct additional geotechnical investigations to define conditions at the toe of the slope. The results of these investigations will be incorporated into detailed design for this facility and submitted as part of the annual report.

5.2.3 Waste Rock Monitoring and QA/QC

The samples collected in 2012 were prepped on site at the Bellekeno prep lab facility located at Keno Hill District Mill. Sample pulps were then composited and sent off site to ALS Chemex for ABA and ICP-MS analysis. A total of 55 samples were sent out for analysis and a summary of the results are presented in Appendix P.

The outlined sampling schedule which was proposed in 2009 has been followed and proved useful in continuing to build a comprehensive geochemical dataset to better assess waste rock for characterization. The compositing frequency was adequate enough to confirm the general rock characteristics of Non-AML rock while verifying the accuracy of the field screening classification. The additional ABA data collected from

all P-AML composites has added to the understanding of the correlation between lithology and geochemical characteristics. Results of this analysis can be seen in Appendix P.

5.2.4 Mine Wall Monitoring

Monitoring in both the excavated areas and the rock storage areas form an integral and vital component of any waste rock management program, as it determines the effectiveness of the management measures and provides valuable information for waste rock management strategies of future developments and closure measures. Mine wall testing during the Bellekeno Mine Development period provided additional confirmation of the geochemical character of the mine walls through multi-element and acid-base accounting analysis.

Mine wall testing was undertaken for underground development completed during 2012 in accordance to the Mine Wall Testing Plan submitted in 2008 under the Water Use License QZ07-078. The sampling was done in a systematic way by a team of Alexco Resource Corp. geologists. A total of 39 mine wall samples were taken and analyzed in 2012. A detailed discussion of results can be seen in Appendix Q.

5.2.5 Humidity Cell and Geochemical Tests

No humidity cell testing was scheduled for 2012 in the Waste Rock Management Plan (WRMP), which was included in the Construction Site Plan submitted in November 2009.

Results of water quality monitoring for the Bellekeno East Temporary Waste Rock Storage Facility (KV-78) were included in the 2012 WUL QZ0-092 Annual Report submitted in March 2012. Details can be seen in Appendix F1 and F2 of the QZ09-092 2012 Annual Report, which is available on the Yukon Water Board's online registry Waterline (www.yukonwaterboard.ca/waterline).

6 MONITORING

6.1 MONITORING AND SURVEILLANCE PLAN

Site environmental monitoring was carried out at the site in accordance with the Monitoring and Surveillance Plan. A revision to the Plan was submitted in September 2011 and approved on May 22, 2012. This updated plan included monitoring and surveillance to reflect requirements of Water License QZ09-092 and also to reflect updates to other terrestrial monitoring (e.g. dust monitoring) which have been developed. A second revision is currently being prepared and will be submitted to EMR following the issuance of QZ12-053.

Water quality and groundwater monitoring have been carried out in accordance with the Type A water license QZ09-092. Results of this monitoring were included within the Type A water license 2012 Annual Report. Details can be seen in Appendix F3 of the QZ09-092 2012 Annual Report, which is available on the Yukon Water Board's online registry Waterline (www.yukonwaterboard.ca/waterline). Permafrost monitoring through geotechnical programs installed at the site of the future Non-AML Waste Rock Disposal Area and the Dry Stack Storage Facility is monitored routinely by the engineers of record (EBA Engineering Consultants Ltd) in accordance with the DSTF OMS Manual, which forms part of the DSTF Construction and Operation Plan. As discussed in section 3.2.1 of this report, an additional GTC and monitoring well were installed on the DSTF, as well as full depth tailings analysis were completed in 2012.

6.1.1 Water Quality Surveillance Network

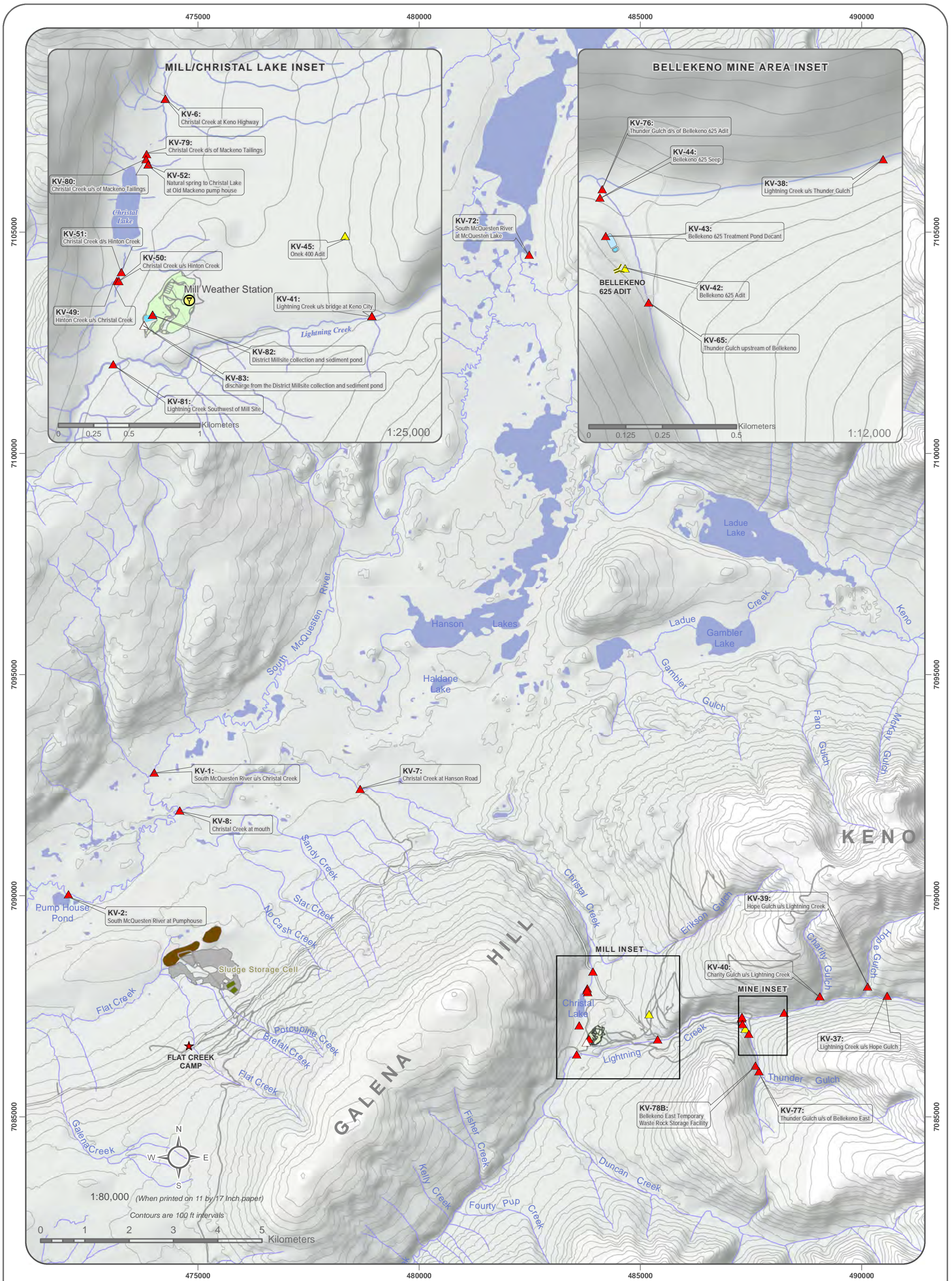
The existing water quality surveillance network for the Keno Hill Silver District Mining Operations includes surface receiving waters in the Lightning Creek and Christal Creek watersheds. Most of the monitoring stations have been sampled extensively in the past. Current water quality monitoring is required in these areas under Water Licence QZ06-074, Water Licence QZ07-078, and Water Licence QZ09-092. Water Licence QZ06-074 expired in November of 2012 and was renewed as QZ12-057, effective on January 30, 2013. Results can be seen in the QZ09-092 2012 Annual Report, which is available on the Yukon Water Board's online registry Waterline (www.yukonwaterboard.ca/waterline). QZ09-092 surface and groundwater monitoring sites can be seen in Figure 6-1, 6-2 and 6-3.

6.1.2 Groundwater Surveillance Network

A groundwater monitoring plan for the Bellekeno mine has been developed under Water Licence QZ09-092. This program outlines monitoring locations and frequency for the Keno District mill and dry stack tailings facility, the non-AML waste rock disposal area, and Keno City.

Groundwater wells are scheduled for monthly monitoring for both water level and quality for the first year after QZ09-092 came into effect to establish baseline conditions, followed by quarterly sampling thereafter, for the duration of the project.

Results can be seen in the QZ09-092 2012 Annual Report, which is available on the Yukon Water Board's online registry Waterline (www.yukonwaterboard.ca/waterline). QZ09-092 groundwater monitoring locations can be seen in Figure 6-2 and Figure 6-2.



- | | | |
|---------------------------------|-----------|-------------------------------|
| Pending Water Quality Station | Highway | Valley Tailings Sludge |
| Adit Water Quality Station | Secondary | Valley Tailings Borrow Source |
| Monitored Water Quality Station | | Valley Tailings |
| | | Millsite Footprints |



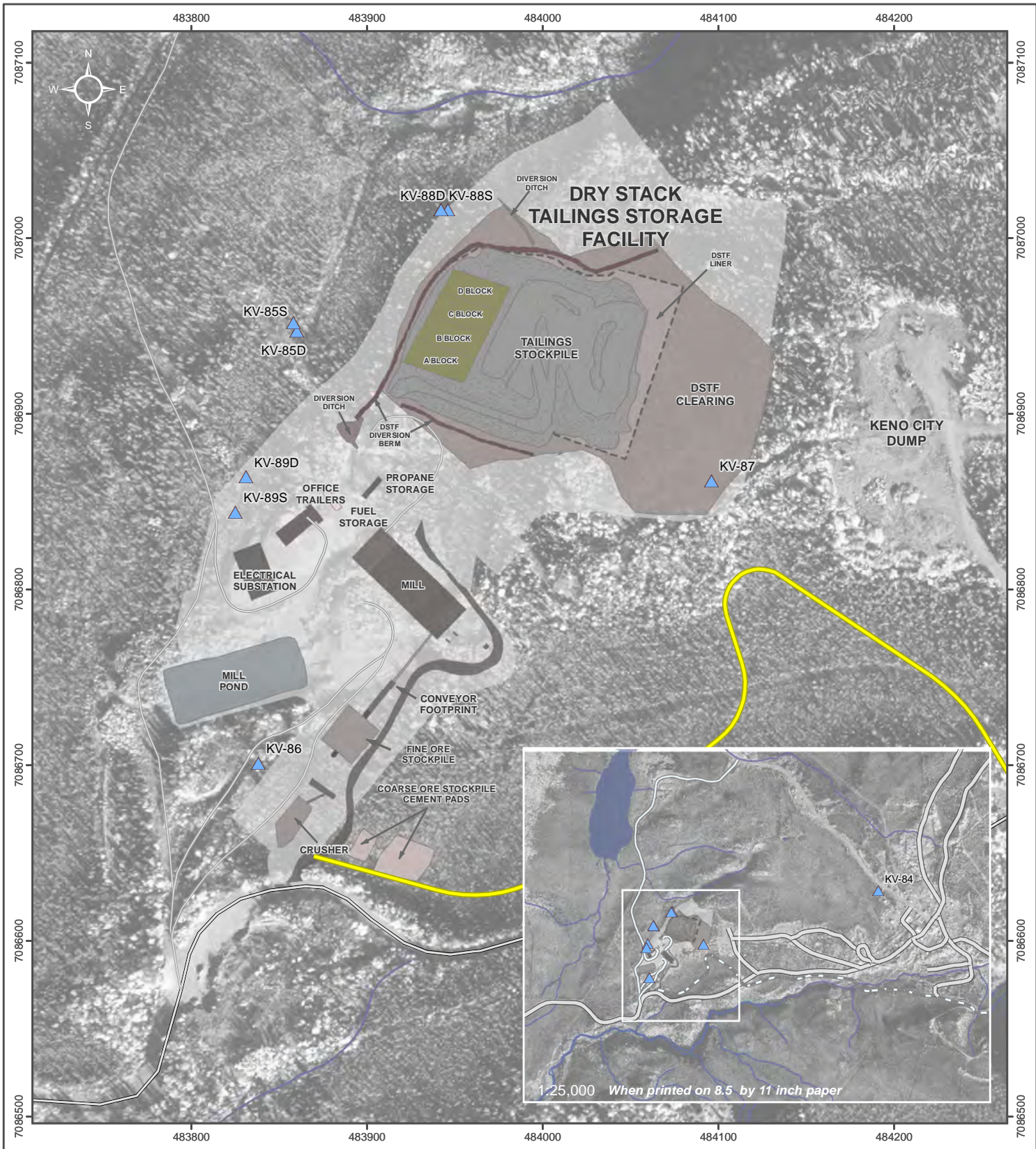
KENO HILL SILVER DISTRICT
FIGURE 6-1
SURFACE WATER QUALITY STATION LOCATIONS
QZ09-092

National topographic Data Base (NTDB) compiled by Natural Resources Canada at a scale of 1:50,000. Reproduced under license from Her Majesty the Queen, as represented by the Minister of Natural Resources Canada. All rights reserved.
 Datum: NAD 83; Projection: UTM Zone 8N

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DRAWN BY: JP	MARCH 2013	VERIFIED BY: TL/KW
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0 50 100 150 Meters

- Groundwater Monitoring Well
- DSTF Cover Trial
- Duncan Creek Road
- Mill Access
- Haul Road

ALEXCO KENO HILL MINING CORP.

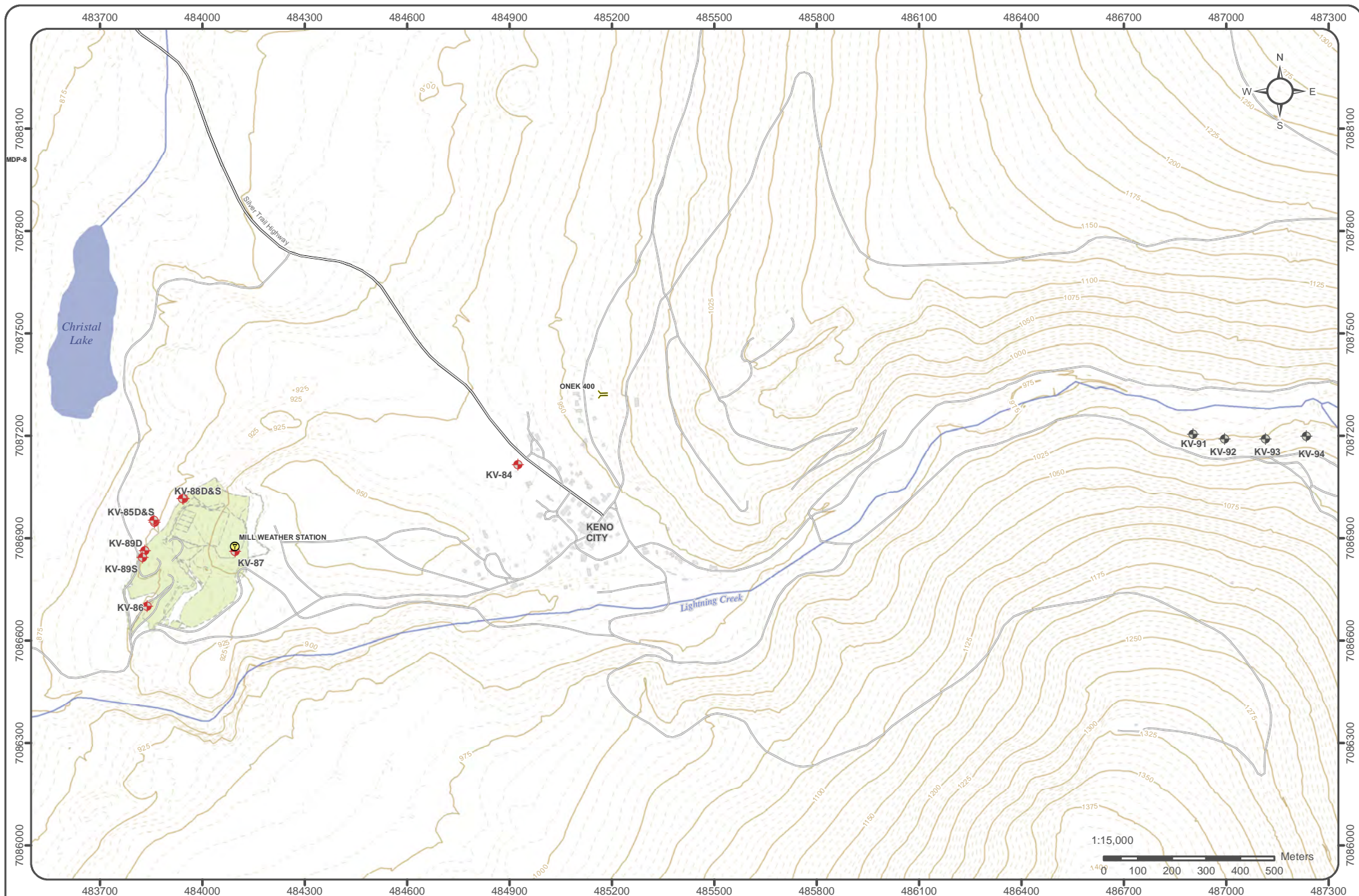
FIGURE 6-2, QZ09-092

GROUNDWATER MONITORING LOCATIONS - MILL SITE AREA

Aerial photography flight date: July 13th 2006. Ortho-rectification produced by Challenger Geomatics Ltd. Site hydrography and contours derived from 2006 aerial imagery. Mill pond survey (Y.E.S. Sept 2010), mill structures, current DSTF footprint and roads survey (ACG, December 2011). Design data obtained from EBA.

Datum: NAD 83; Projection: UTM Zone 8N




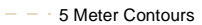



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-  Weather Station
-  Groundwater Well
-  Monitoring Well, Pending
-  5 Meter Contours
-  25 Meter Contours
-  Buildings
-  Mill Site

* S = shallow well, D=deep well; usually these wells are right next to each other and look like one point on the map



2012 ANNUAL REPORT
FIGURE 6-3
GROUNDWATER MONITORING
STATION LOCATIONS

DRAWN BY JP MARCH 2013 VERIFIED BY TL

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6.1.3 Permafrost Monitoring

Geotechnical programs have identified areas of permafrost within operational areas of the project. Specifically, some permafrost was encountered beneath the proposed non-AML Waste Rock Storage Area (WRSA) and in the vicinity of the proposed Dry Stack Tailings Facility (DSTF). Ground temperature and permafrost monitoring is currently in place at these locations. Details on monitoring for the DSTF will be included in the DSTF OMS manual, which forms a part of the DSTF Development and Operations Plan.

Locations are monitored routinely by the engineers of record (EBA Engineering Consultants Ltd). Details on permafrost monitoring for the WRSA are included in the Mine Development and operations Plan.

Results of the 2012 permafrost monitoring can be seen in the EBA monitoring memorandums seen in Appendix R.

6.1.4 Physical Inspections

The purpose of the physical inspection is to observe and record sufficient information related to physical and water retaining structures to permit development of a course of action, repair or rehabilitation if it is required. Physical inspections are currently inspected under the Physical Inspections and Reporting Plan prepared for Water Licence QZ09-092. Results of these inspections are presented in Appendix N.

6.1.5 Meteorological Monitoring

As part of closure planning studies, a meteorological station was established on Galena Hill in summer 2007 by Alexco. The station measures air temperature, relative humidity, barometric pressure, rainfall, wind speed and direction, solar radiation, and soil temperature. As a condition of Type A water use Licence QZ09-092, a second meteorological station and snow course was established at the Keno District Mill site. The location of the mill site weather station is shown on Figure 6-4. A Yukon Government monitored snow course station also exists in the area. An analysis of the meteorological monitoring data can be Results can be seen in the QZ09-092 2012 Annual Report, which is available on the Yukon Water Board's online registry [Waterline \(\[www.yukonwaterboard.ca/waterline\]\(http://www.yukonwaterboard.ca/waterline\)\)](http://www.yukonwaterboard.ca/waterline).

6.1.6 Noise Impacts and Sound Monitoring

The objective of noise impact monitoring was to reduce and mitigate impacts to local residents and the environment resulting from noise produced during the development and operations of the Bellekeno Mine and Keno District Mill. To achieve this goal, AKHM identified potential noise sources and receivers in the Noise Abatement Plan, and will continue to do so during development and production as a part of monitoring. Details can be found in the Noise Abatement Plan submitted under QML-0009. An update to this plan was approved on March 19, 2013, and includes potential noise impact associated with the development of the Lucky Queen and Onek 990 Mines.

As identified in the 2011 review of the data collected from 2009 to 2011 (submitted in the 2011 QML Annual Report) no significant noise impacts (defined as exceedences of daytime or nighttime noise levels as recommended in the Decision Document) have been observed in Keno City as a result of operations. With the

approval for development of the Lucky Queen and Onek 990 Mines in November 2012 and the updated Noise Abatement Plan for 2013, noise monitoring at newly identified sites will commence in 2013.

6.1.7 Dust Abatement and Monitoring

In accordance with Clause 69 of the Decision Document for the assessment for the Bellekeno Mine Project (YESAB File Number 2009-0030), dustfall monitoring stations were installed at four locations near the Keno District Mill site. Bergerhoff dust monitoring gauges were selected as the appropriate instrumentation to carry out this program. At the time of installation, the Yukon had not yet developed the Ambient Air Quality Standards.

The Bergerhoff deposit dust gauge is designed to measure dust deposition, which can be reported as a weight per unit area over unit time. These results are comparable to the Ambient Air Control Objectives in the Pollution Control Objectives for the Mining, Smelting and Related Industries of BC (1979), which provides an acceptable range of 1.7 to 2.9 mg/(dm²*d).

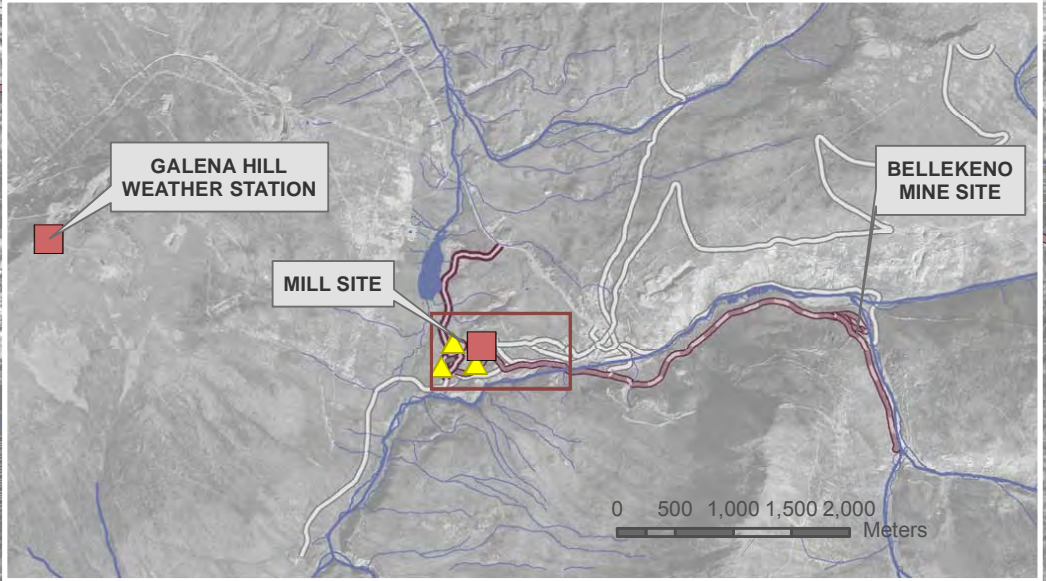
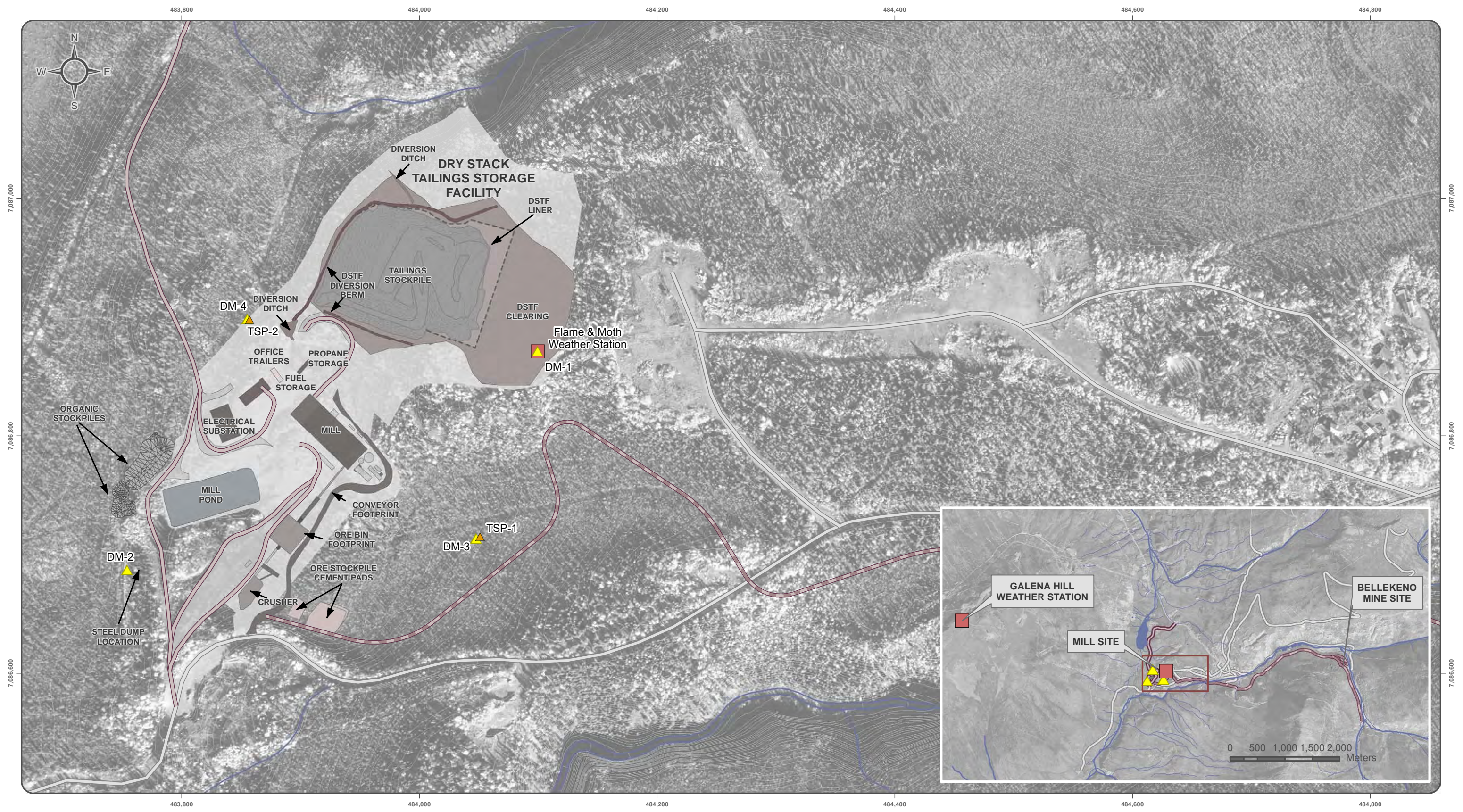
As a result of the updated Monitoring and Surveillance Plan Revision 1.1, as well as the development of the Yukon Ambient Air Quality Standards, two Total Suspended Particulate (TSP) monitoring devices were installed near the Keno District Mill site. After a thorough investigation of both continuous duty (real-time) constant flow air monitoring systems and discrete (gravimetric) samplers, the BGI OMNI sampler was chosen as the most appropriate instrument. TSP results have been compared to the Yukon Ambient Air Quality Standards [TSP = 120 µg/m³ (24-hr average)].

In addition to TSP monitoring using the BGI OMNI samples, samples from these instruments were analyzed for total metals. The most common metals observed were aluminum, calcium, iron, lead, magnesium, manganese, sulfur, and zinc.

Though several results from the Bergerhoff method exceeded the Ambient Air Control Objectives in the Pollution Control Objectives for the Mining, Smelting and Related Industries of BC, all of the TSP results were well below the Yukon Ambient Air Quality Standards, which is the accepted standard.

The complete 2012 monitoring results can be seen in Appendix S. Dust control measures including dust suppression of haul roads, mill site, and DSTF continue on an as-needed basis throughout the year.

Mill site layout with locations of both the Bergerhoff dust monitoring gauges and TSP monitoring instruments currently in place are shown on Figure 6-4.



Aerial photography flight date: July 13th 2006. Ortho-rectification produced by Challenger Geomatics Ltd. Data obtained from EBA: "As built" spatial data: Mill pond (Y.E.S.), Mill structure, and current DSTF footprints, Roads (In House survey December 11th 2011). Design spatial data: Conveyance and water collection, diversion ditches and berm.

Datum: NAD 83; Projection: UTM Zone 8N

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Main Map: 1:3,000 Inset Map: 1:65,000
 (when printed on 11 x17 inch paper)

- Total Suspended Particulates Monitor
- Dust Monitor Station
- Dry Stack Tailings
- Design PU
- AsBuilt; As Built
- Mill Access Road
- Haul Road
- Local Road



ALEXCO KENO HILL MINING CORP.

DUST MONITORING AND WEATHER STATION LOCATIONS

Drawn By JP	MARCH 2013	Verified by VB
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6.1.8 Waste Rock Monitoring

All waste rock management facilities are subject to monitoring for physical and geochemical stability (acid rock drainage or metal leaching). A complete Waste Rock Management Plan was attached to the Construction Site Plan Revision 1 and includes detailed descriptions of waste rock monitoring and mine wall testing. This plan was submitted as part of the QML-0009 2010 Annual Report submitted in June 2011.

This monitoring is discussed in Section 5.0 of this report, and detailed results can be seen in the WRMP 2012 Technical Memo attached in Appendix P.

6.1.9 Environmental Effects Monitoring

AHKM prepared the first study design for the Environmental Effects Monitoring (EEM) program required under the federal Metal Mining Effluent Regulations (MMER) and submitted in September 2011. The first round of EEM program was completed in 2012 with the EEM interpretive report for Bellekeno completed and submitted in March 2013. Sub-lethal toxicity testing of effluent from the BK625 treatment pond decant was conducted during 2012 and no significant adverse effects were noted during these tests. The results for the first cycle of EEM are presented in Appendix T.

6.1.10 Wildlife Monitoring Plan

The Keno Hill Silver District, including Elsa, the Silver Trail Highway, District Mill, Bellekeno, Lucky Queen, and Onek 990 Mine sites, and all associated haul roads are frequented by natural wildlife in the area. This wildlife includes fox, bear, moose, wolverine, rabbit, lynx, and a number of other species of animal and birds. Wildlife encounters are recorded in a log located in the Elsa Admin Office. The most common sightings involved moose, fox, as well as both black and grizzly bears in 2012. Other less common sightings involved lynx, wolves, and cougar.

There were two events during the summer months of 2012 in which Wildlife Officers were notified of bear problems surround the Flat Creek Camp area. Officers came in and trapped the bears, then relocated them offsite. In compliance with Commercial Dump Permit # 81-012, upgrades to the location of solid waste disposal included upgrades to the electric bear fence and addition of a cattle guard to prevent animals from entering the facility.

Conservations officers were also called to site for an incident involving a moose calf on the BKR Haul Road. The calf was observed by an employee to be stuck in a mud hole along the side of the road. Though the calf was able to free itself, it was seriously injured, and the cow that was also nearby was extremely agitated. The conservation officer (CO) was called and Alexco personnel immediately shut down the use of the haul road to prevent any contact or agitation to the animals. Unfortunately due to the extent of the injuries, the CO dispatched the calf. A detailed report completed by the CO is attached in Appendix U.

Any encounters between vehicles and wildlife are reported to both the Safety and Environmental departments for documentation and if required, incident investigation. 2012 saw no encounters between AKHM vehicles and wildlife.

6.1.11 Traffic Management

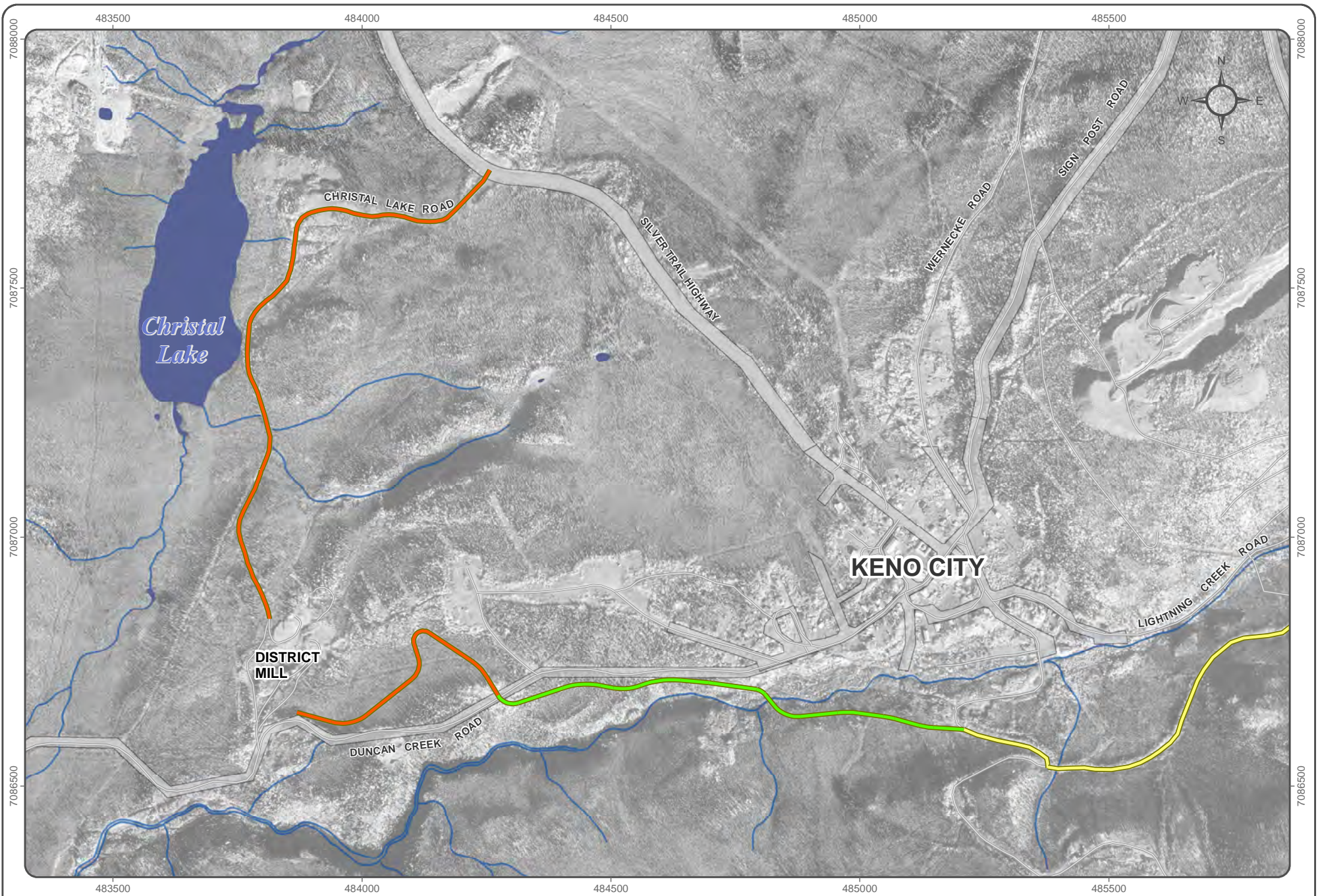
2012 Traffic Routine and Volume

The BKR haul road crosses two public roads in the Keno City area, both Duncan Creek road and the access to the Sourdough Trail. Mine traffic has been redirected around Keno City to ensure that direct ore haulage traffic is routed around the community, effectively minimizing impact on the local community. This road consists of two portions, the Bellekeno Bypass North, which ensures all mill traffic and concentrate haul will bypass Keno City via Chrystal Lake Road, and the Bellekeno Bypass South which connects the Sourdough Trail on the south side of Lightning Creek to the Duncan Creek Road across Lightning Creek. The 2012 Traffic Log can be seen in Appendix V. Figure 6-5 shows the routing of traffic around the community along the Bypass Roads.

With the developments of the Lucky Queen and Onek 990 Mines, the Onek Connector Road will be developed from the Wernecke Road, crossing Sign Post Road, along the historic Onek waste rock storage area, to the Onek 990 Portal, crossing Lightning Creek Road and the new Onek Access Bridge across Lightning Creek to the Bellekeno Haul Road (Figure 6-6). The road maybe restricted to one-way travel where conditions prevent construction to 9 m wide. Until the completion of the new Onek Access Bridge scheduled for construction in 2013, some light vehicle traffic has been directed through Keno City. This traffic will discontinue with the construction of the new Onek Bridge. Estimated traffic volumes during development can be seen in Table 6-1 below. The 2012 Traffic Log showing initial traffic prior to the Onek Bridge construction can be seen in Appendix V.

Table 6-1 Estimated Traffic through Keno City during Development – Lucky Queen and Onek 990 Mines

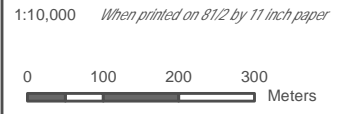
Vehicle Type	Average Traffic Volume (roundtrips/week)
Lucky Queen	
Light Truck	45
Water truck	2
Sewage truck	2
Semi trailer loads (mining equipment, building supplies, construction equipment, etc.)	3
Grader	1
Onek 99	
Light Truck	50
Water truck	1
Sewage truck	1
Semi trailer loads (mining equipment, building supplies, construction equipment, etc.)	3
Grader	1
Dump truck (hauling P-AML waste rock to Onek WRSF)	5
Total	114



Aerial photograph obtained from Geodesy Remote Sensing Inc., Calgary Alberta. Imagery acquired September 13th and 14th 2006. Site hydrography derived from 2006 aerial imagery obtained from Aero Geometrics, Calgary Alberta

Datum: NAD 83; Map Projection: UTM Zone 8N

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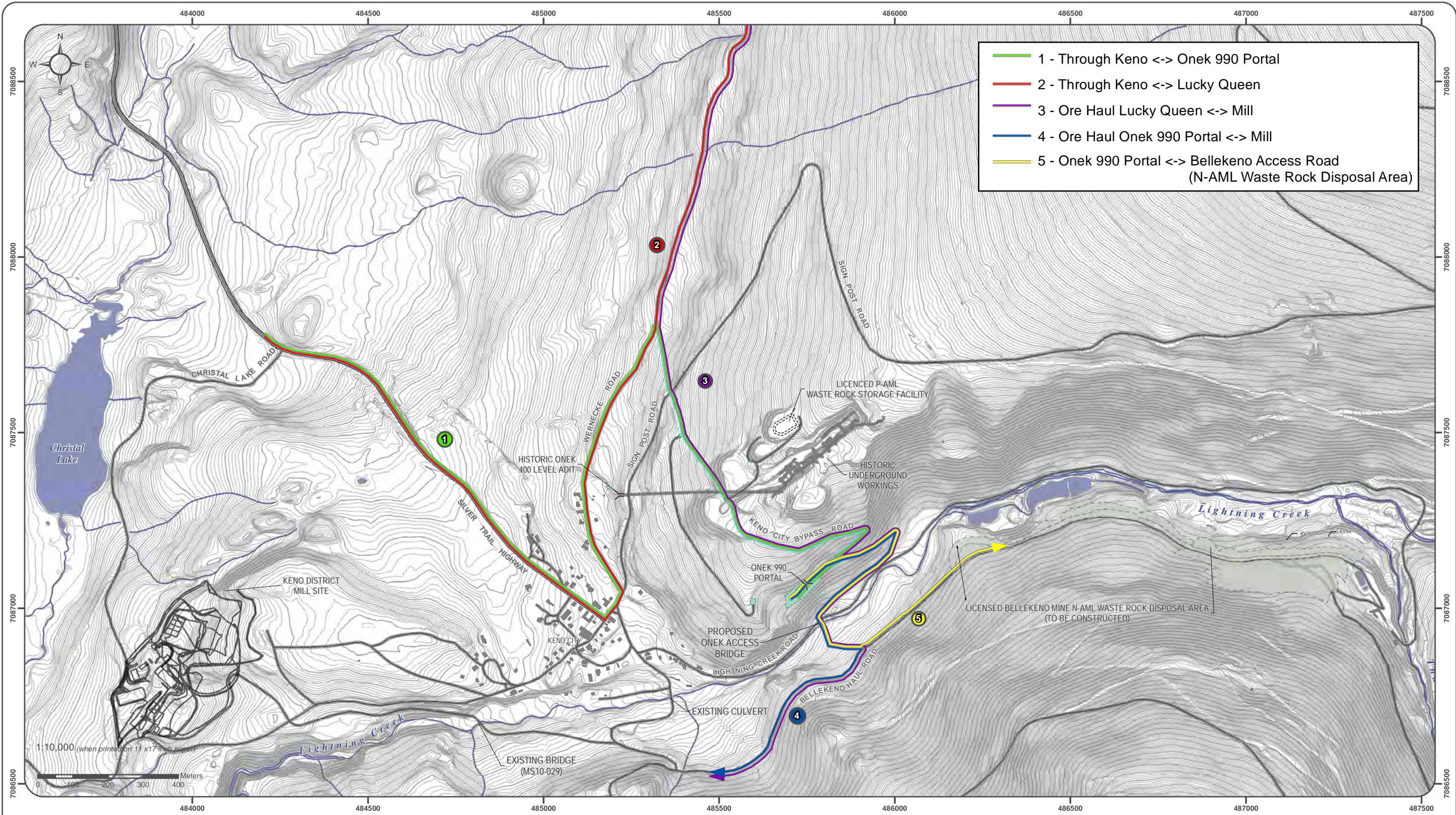
- Bellekeno Project Bypass Road North
- Bellekeno Project Bypass Road South
- Bellekeno Haul Road



ALEXCO KENO HILL MINING CORP.
FIGURE 6-5
BELLEKENO PROJECT BYPASS ROAD

MARCH 2013

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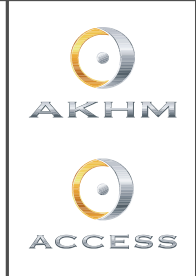
Aerial photograph obtained from Geodesy Remote Sensing Inc., Calgary Alberta. Imagery acquired September 13th and 14th 2006.

Site contours and hydrography derived from 2006 aerial imagery obtained from Aero Geometrics, Calgary Alberta.

Datum: NAD 83; Projection: UTM Zone 8N

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Proposed Road	Existing Features	Contour (5 m interval)
Highway	Proposed Feature	Contour (1 m interval)
Secondary	Building/Structure	



ALEXCO KENO HILL MINING CORP.

FIGURE 6-6
LUCKY QUEEN, ONEK 990 AND BELLEKENO ACCESS ROUTES

MARCH 2013

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 (Last edited by: jpan, 3/25/2013/16:26 PM)

An updated Traffic Management Plan that includes the development of the Lucky Queen and Onek 990 mines, in addition to the Bellekeno Mine and District Mill was submitted in 2012 and approved on March 19, 2013. The new routes can be seen in Figure 6-6 Lucky Queen, Onek 990, and Bellekeno Mines Access Routes.

2012 Public Access

Several minor and two major encounters occurred in 2012 that involved public citizens / tourists walking or using ATV's and private vehicles on parts of the BKR haul road. The AKHM practice regarding these circumstances includes radio call-out by AKHM employees notifying all other personnel of the location and number of persons on the roads. If safe to do so, employees should discuss with the persons that they are on private roads which heavy equipment traffic is frequent, and could potentially be a safety concern. If persons do not make their way off the private road, then AKHM management is informed and will decide how best to manage the situation.

During the initial surface blasting of the Sign Post Portal, AKHM set up guard stations on all access roads/trails surrounding the blasting site, as well as initiated extensive community notification protocols to all Keno City residents. Unfortunately one citizen was extremely unhappy with the development of the Sign Post Portal, and on two occasions broke through the guard lines prior to blasting and placed himself in the blast zone. All blasting was put to a halt until the citizen removed himself from the area.

Another incident occurred that involved several non-employees staying at the Keno City Campground who drove their vehicle up the BKR Haul Road at night to the 625 Adit. Their vehicle broke down and during the morning shift change was observed to be consuming alcohol while attempting to get a ride from employees back to the campground. Safety personnel escorted them back to the campground and reported the incident to RCMP who arrived later on site. RCMP searched the vehicle and found open alcohol and dealt with it appropriately. Later that day the same citizens arrived and without communication with Site personnel, drove another vehicle up to 625 at high speeds towed the initial vehicle down the BKR haul road during dayshift hours when loaded haul trucks were present. The RCMP were notified a second time that day and arrived to follow-up.

2012 Vehicle Employee Incidents

There were eight vehicle incidents of note in 2012 that are discussed below, none major injuries to employees or public persons.

1. An employee came into the corner and lost control and flipped the septic truck into the ditch on the Silver Trail between Elsa and the Christal Lake Road (CLR). Though the driver was maintaining the legal speed limit, the speed was not appropriate for road conditions.
2. An employee was escorting a flatbed truck from Bellekeno to Elsa. On the CLR road at marker #2 the flat bed stalled. At one point in time the employee could not see the flat bed and decided to back up to see if there was a problem. As he backed up he went too close to the shoulder, it gave way and the light vehicle went off the road.
3. During fall conditions an operator of the shuttle van transporting crews to the Mill during shift change lost control and ended up in the ditch on his return trip from Elsa to Mayo.

4. An employee was driving the lowboy with a jumbo on it down the Lightning Creek road while another employee was following behind, the guard employee could not pass to watch from the front as the road was too narrow to get by the lowboy. The boom on the jumbo was lifted to clear the stacks on the truck and the guard employee saw the boom about to hit the line. He honked at the driver; however the driver could not hear the horn and hit the telephone line. This knocked the line down and split the attached pole in half.
5. Employee was driving a vacuum truck up the Galkeno 300 road and slowed down to drive over a small glacier created by flowing water that was freezing on the road. The front of the truck slid off the glacier sideways into the ditch on the downhill side of the road. The truck had singles on the front drivers for chains, no steering chain on the front. This was the first trip of the day and there was no damage or fluid leaks, no environmental damage.
6. Employee driving from the District Mill to Elsa encountered slippery condition resulting in the vehicle rolling over in the ditch on the Silver Trail Highway
7. Worker was driving Volvo rock truck hauling ore from underground to the Mill via the Bellekeno haul road. Operator was hauling a load of ore to the mill travelling down the BKR Haul Road. As he approached BKR 5 and went around a corner, he looked in his rear view mirror and noticed the box of his truck was sliding. He attempted to correct the slide but road conditions did not allow this action. At this time he had lost control of the truck, and the whole truck slid over to the right hand side of the road. It made contact with the berm and the box tipped over on its side. He immediately exited the cab and reported the incident.
8. Employee was hauling a load of ore on the Volvo AD30 down BKR road from Bellekeno to the Mill. He had just passed BKR 12 when his truck started to slide towards the valley. He cranked the wheel to try and direct it back onto the road and towards the embankment. His truck slipped into the left ditch, did a 180 degree spin and ended up backwards facing up the road in the ditch. Though the Volvo had chains on it, the road is slippery and required additional sanding.

6.2 ADAPTIVE MANAGEMENT PLAN

Pursuant to Clause 90 and Clause 91 of QZ09-092, Alexco developed a Bellekeno Adaptive Management Plan, which was submitted to Yukon Water Board in April, 2011. This plan was based on the framework established by the District Wide Adaptive Management Plan, but was customized for the specific activities and developments of the Bellekeno Undertaking. No adaptive management triggers or activities were undertaken during 2012.

Reporting for the AMP including a summary of any adaptive management triggers and actions was prepared for the WUL QZ09-092 2012 Annual Report. The QZ09-092 2012 Annual Report is available on the Yukon Water Board's online registry Waterline (www.yukonwaterboard.ca/waterline).

7 UNAUTHORIZED DISCHARGE

7.1 REPORTABLE SPILLS

On October 11th, 2012 water treatment operators noticed a large formation of frozen liquid immediately adjacent to the 625 water treatment facility. Upon inspection it was determined that the primary mixing tank was overflowing with treated, but not yet settled mine effluent. Due to extremely cold temperatures at the time, all of the treated mine effluent was frozen and able to be removed using excavators and haul trucks. An estimated 68 m³ of frozen material was removed, roughly 68,000L, and placed in the approved Valley Tailings Disposal area. For detailed spill report see Appendix W.

7.1.1 Non-Reportable Spills

There were six non-reportable spills recorded at the Site in 2012. According to the reportable spill quantities defined in Schedule A of the Yukon Spill Regulations, no report to the 24hr Yukon Spill Report Centre was required. There were three spills regarding oil, one diesel, one propane, and one drill polymer. Details of the spill and subsequent remediation can be seen in the Appendix X.

7.2 PERMIT EXCEEDENCES

There were three Water Licence exceedences during the course of 2012 relating to mine discharge. Exceedences occurred at the Bellekeno 625 treatment discharge location (KV-43). This comprised of two total suspended solids events and one ammonia event. Details of these exceedences can be seen Appendix Y.

8 CARE AND MAINTENANCE AND RECLAMATION

The care and maintenance activities at the Keno Hill District are the primary objective of Water Use License QZ06-074, which was renewed and issued as QZ12-057 effective January 30, 2013. The purpose of this license is to obtain water, divert water, store water and to deposit waste for the purpose of care and maintenance activities for the Keno Hill Mines Property.

Alexco Resource Canada Corporation was issued Water Use Licence QZ07-078 on October 3, 2008, for the purpose to obtain water, store water, and to deposit a waste for the purpose of advanced exploration and preliminary development activities at the Bellekeno Mine on the Keno Hill Property. The Bellekeno project has since moved into production (under QZ09-092) and in 2011, Alexco applied to amend QZ07-078 to remove clauses pertinent to the mine production Licence. Alexco Keno Hill Mining Corp. (AKHM) was issued Water Use Licence QZ10-060 on November 16, 2011 for the amended purpose: to store water and to deposit a waste for the purpose of maintaining the Onek P-AML Waste Rock Storage Facility on the Keno Hill Property.

Information and analyses pertaining to the Bellekeno Mine and District Mill areas have been fully developed through WUL QZ09-092 2012

8.1 CARE AND MAINTENANCE ACTIVITIES

Prevention of environmental degradation within the Keno Hill Silver District is accomplished largely by the daily operation of lime-addition water treatment systems existing at Galkeno 900, Galkeno 300, Silver King 100, and Bellekeno 625 adits. The Valley Tailings Facility is also treated on an as-required basis during spring and early summer. Care and Maintenance activities and performance monitoring (i.e. water quality monitoring) is undertaken by Elsa Reclamation and Development Company Ltd. (ERDC), using on-site laboratory facilities for daily and weekly water quality analysis. Monitoring of surface and groundwater sites as well as physical conditions is completed as per WL monitoring schedules.

A detailed discussion of these results and other Care and Maintenance activities can be found in 2012 Annual Water License report submitted to the Yukon Water Board as per Water Use License QZ06-074 (QZ12-057 effective January 30, 2013) in February 2013.

8.2 RECLAMATION ACTIVITIES

Progressive reclamation of the Dry Stack Tailings Facility (DSTF) was initiated during the summer of 2012 as presented in the Reclamation and Closure Plan to prevent dusting and erosion of exposed tailings slopes. Final slope and bench elevations were reached on the west toe of the DSTF, allowing final reclamation to begin.

The progressive reclamation included four areas (block A, B, C, & D) on the DSTF which were covered with granular material and seeded to test various cover trials. The cover material was local material that had been cleared and stockpiled during the initial construction of the Keno District Mill. The seed material (Keno District Dry Land Seed Mix) was selected using a blend of suitable species seeded at the Brewery Creek and Minto Mine sites also located in the Yukon. For a thorough discussion of the DSTF progressive reclamation in 2012, please see Appendix Z.