WOLVERINE MINE

QUARTZ MINING LICENSE QML-0006

2011 ANNUAL REPORT

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Appendix A: Environmental Monitoring Reports

1 Introduction

This Annual Report has been prepared to satisfy requirements contained within Quartz Mining License QML-0006 (QML) Condition 10.5 for activities that occurred during the period of January 1 to December 31, 2011 at the Wolverine Mine.

Table 1-1 outlines the QML Annual Report documentation requirements and the corresponding report section where the information is provided herein. A Socio-Economic Assessment summary is provided in Section 9 of this report, to satisfy requirements of the Environmental Assessment Screening Document (issued September 20, 2006 by the Development Assessment Branch, Government of Yukon).

Table 1-1: QML Annual Report Information Requirements and Corresponding Report Section

QML Section	Requirement	Section
10.5 a)	A summary of mining activities at the mine.	2.3
10.5 b)	A map showing all structures, works and installations associated with the Undertaking.	2.1
10.5 c)	The total amount of ore and waste removed from the mine.	2.7
10.5 d)	The total amount and the average head grade of ore processed through the mill.	2.7
10.5 e)	The total amount and grade of all stockpiled ore.	2.7
10.5 f)	The total amount and grade of concentrate produced, stockpiled, and transported from the Undertaking.	2.7
10.5 g)	As-built drawings of the mine and of all structures, works and installations constructed or altered in the mine.	2.3
10.5 h)	Details respecting any action taken as a result of the recommendations made by the engineer in relation to the inspection referred to in paragraph 10.1.	3
10.5 i)	A summary of any updates to estimates of ore reserves and mine life, including reserve category, tonnage and grade.	2.4
10.5 j)	A summary of any underground stability incidents.	2.5
10.5 k)	A summary of paste backfill placement activities conducted and their locations in the mine.	2.6
10.5 l)	A summary of humidity cell tests undertaken for waste rock and paste backfill.	2.6
10.5 m)	A summary of quantity and related analysis of leachate collected from paste backfill.	2.6
10.5 n)	The total amount of tailings deposited in the tailings impoundment.	2.2
10.5 o)	An evaluation of the performance of the tailings facility, including an estimate of	2.2

QML Section	Requirement	Section
	remaining available storage capacity in the facility.	
10.5 p)	The data generated from the full depth sampling of the tailings.	2.2
10.5 q)	A summary of any hydrogeology studies undertaken and related analysis of these data, including groundwater flow pathways as influenced by underground workings.	4
10.5 r)	A summary and evaluation of data results from the field pilot test of the bio-pass system.	8.1
10.5 s)	A summary of surface water quality monitoring, including any acute lethality testing conducted.	5.1
10.5 t)	A summary of groundwater quality monitoring in wells downslope of the mine workings.	5.2
10.5 u)	A summary of the programs undertaken for environmental monitoring and surveillance as outlined in the Monitoring and Surveillance Plan and the Wildlife Protection Plan, including an analysis of these data and any action taken or adaptive management strategies implemented to monitor or address any changes in environmental performance.	10
10.5 v)	A summary of progressive and ongoing reclamation activities.	8
10.5 w)	A summary of proposed development and production for the coming year.	10
10.5 x)	A summary of activities related to care and maintenance of the Undertaking, including any temporary closure activities, if applicable.	8
10.5 y)	A summary of spills and accidents that occurred as a result of the Undertaking.	6
10.5 z)	A summary of the previous and projected use of the access road, including maintenance work conducted, a summary of the level of traffic, access control issues, wildlife incidents and other accidents, and upgrade or maintenance work planned for the upcoming year.	7

1.1 Quartz Mining License Requirements

All major and minor permits are in place for the Wolverine Mine, with all infrastructure located on YZC mineral claims. All QML requirements pertaining to monitoring and reporting were achieved in 2011, and the submissions to Yukon Energy, Mines and Resources (EMR) are summarized in Table 1-2. All plans and reports submitted to EMR are available on the EMR website: http://www.emr.gov.yk.ca/mining/wolverine.html.

Table 1-2: QML Submissions in 2011

Submission	Date Submitted
Waste Management Plan V2010-03	7-Feb-11
Spill Contingency Plan V2010-03	10-Mar-11
2010 Annual Report for QML-0006	31-Mar-11
2010 Annual Report for QML-0006: Wildlife Protection Plan	31-Mar-11
2010 Annual Report for QML-0006: Monitoring and Surveillance Plan	31-Mar-11
Mine Development Plan V2010-02 Ground Control Management Plan Addendum	31-Mar-11
As-constructed report: Airstrip/Industrial Complex	5-Apr-11
Tailings Facility Starter Dam As-Constructed Report addendum (Klohn Crippen Berger)	13-May-11
General Site Plan Addendum for Quarry activities	14-Jun-11
General Site Plan Addendum for Quarry activities	11-Jul-11
General Site Plan V2011-05	22-Aug-11
EBA Engineering Consultants Annual Inspections of the On-Site Earth Structures	2-Sept-10
Klohn Crippen Berger Wolverine Tailings Facility Annual Tailings Facility Physical Inspection	2-Sept-10
Swallow Inspection Report For Underground Geotechnical Inspection	2-Sept-10
General Site Plan Addendum for Operations Phase Waste Rock Pad	17-Oct-11

2 2011 Mine Activities

Mine activities in 2011 focused on the addition of project components to support the underground mine operations, continued ramp-up of milling operations, and continued underground development.

2.1 Mine Development – Surface Infrastructure

Figure 2-1 and Figure 2-2 provide the location of major surface infrastructure for the overall site, and at the industrial complex area, respectively. These figures are updates to the proposed construction figures provided in *General Site Plan V2011-05.*

Major construction activities in 2011 included the completion of the following mine and mill support infrastructure:

- Operations phase waste rock pad (see Picture 2-1);
- Wet Shotcrete Plant (see Picture 2-2); and,
- Truck Shop (see Picture 2-3);

Picture 2-1: Operations phase waste rock pad

Picture 2-2: Wet shotcrete plant under construction

Picture 2-3: Truck shop

2.2 Tailings Facility Activities

The total amount of tailings deposited into the tailings impoundment in 2011 was 114,112 tonnes, derived from 153,351 tonnes of ore and waste milled. In addition to the 33,389 tonnes deposited in 2010, the total amount of tailings stored in the facility was 147,501 tonnes as of the end of 2011.

The tailings facility has performed as planned and as of December 31, 2011, was surveyed to contain 370,739 m^3. As the starter impoundment has a capacity of 665,127 m^3, the available volume remaining is 44%. The Stage 2 dam raise is to be completed in 2012, which will increase the available volume in the facility to ~1.3 Mm^3.

A full depth sampling of the tailings was not conducted as the area was unsafe for boats to access the tailings surface.

Picture 2-4: Tailings storage facility and mine access road.

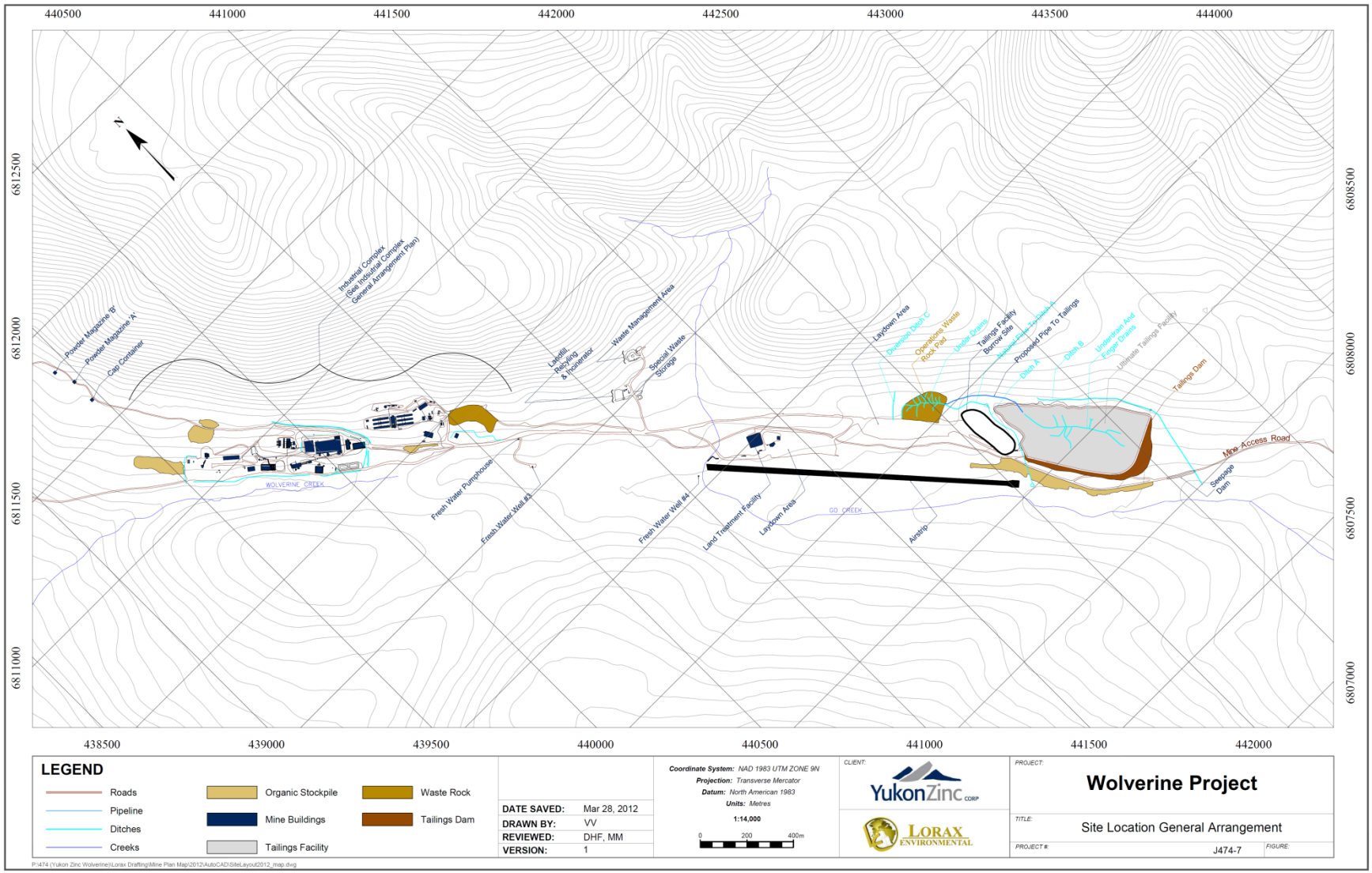


Figure 2-1: Wolverine Mine General Site Plan End of 2011

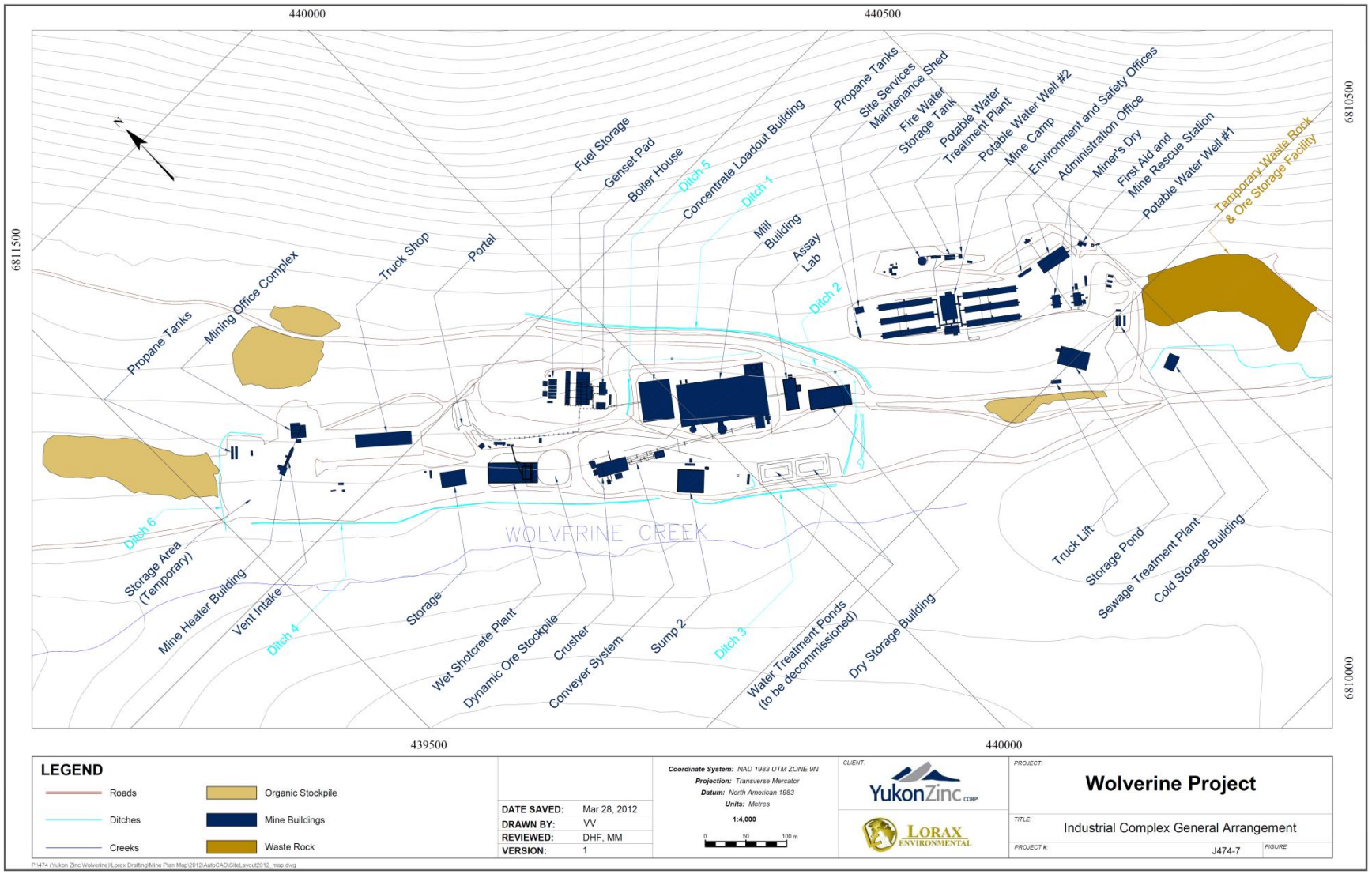


Figure 2-2: Wolverine Mine Industrial Complex End of 2011

2.3 Underground Mine

The primary objectives of underground development were to increase the number of stopes available for development to increase the production of ore and the extraction of waste. A number of initiatives were completed to facilitate increasing production, including:

- Construction of a wet shotcrete plant to allow for the on-site production of shotcrete, which will eliminate the requirement to ship in shotcrete, and will speed up the shotcreting process.
- The purchase of underground, surface and ventilation surveying equipment and software, as well as advanced mine software to improve planning, drafting and surveying to support the increased number of headings.
- Review of the Ground Control Management Plan and other systems such as the paste fill fences to identify opportunities to optimize production cycles.
- Establishment of high and low grade ore stockpiles to enable the mill to blend ore and maintain a more consistent feed grade.

The following drawings to illustrate the development completed in 2011 are provided below:

- Figure 2-3: Underground workings emphasizing 2011 development; and
- Figure 2-4: Paste backfill locations.

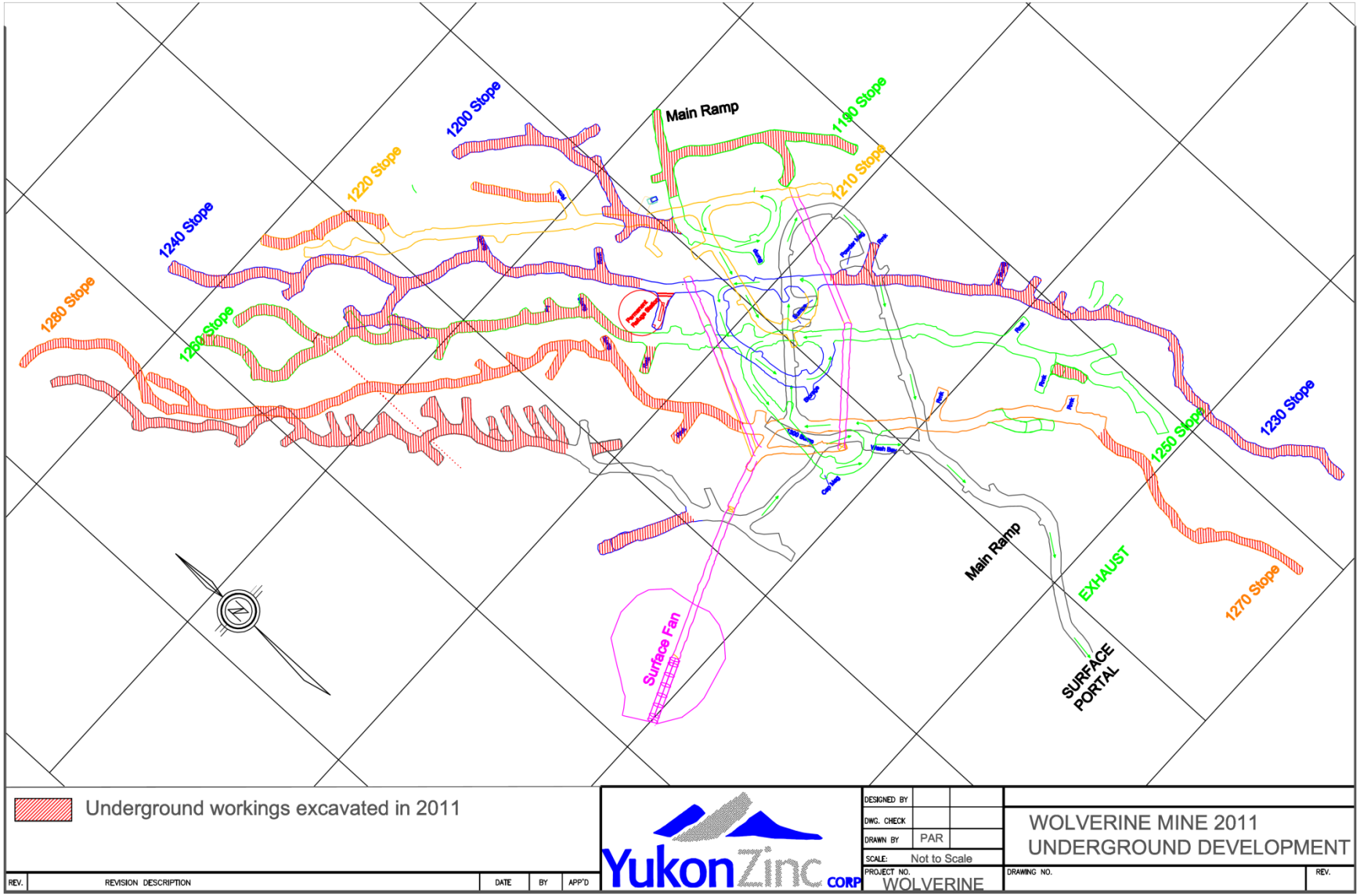


Figure 2-3: Overall 2011 Underground Development

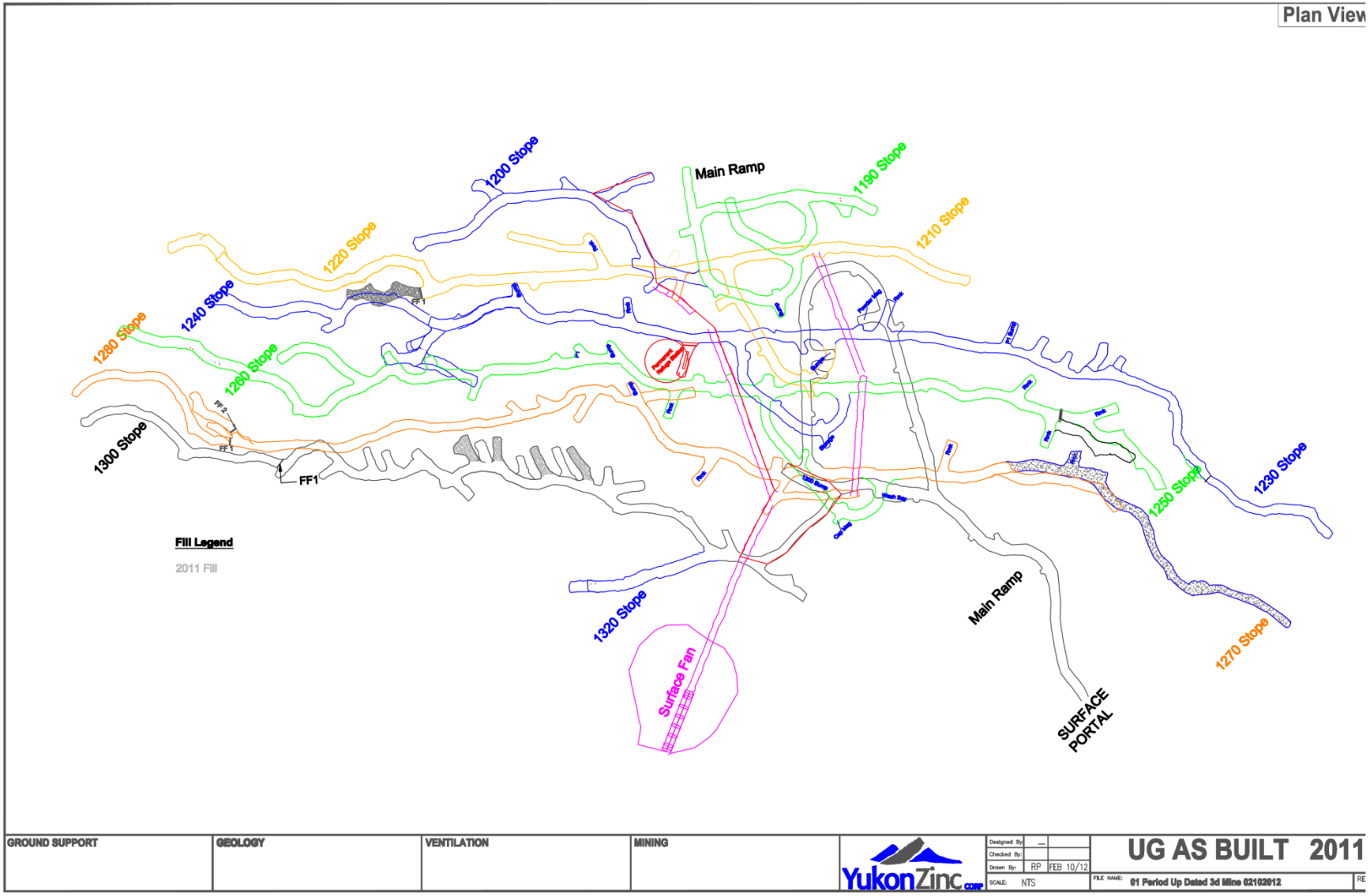


Figure 2-4: Paste Backfill Locations

2.4 Updates to Estimates of Ore Reserves and Mine Life

An update was not determined for the ore reserve or mine life in 2011.

2.5 Underground Stability Incidents

There were no reportable underground stability incidents in 2011.

2.6 Paste Backfill

Paste backfill placement underground commenced in August 2011 and the locations are shown in Figure 2-4. In total, 13,752 tonnes of paste were placed underground in 2011. Details of humidity cell tests conducted for paste backfill analysis are provided in the *Wolverine Mine Monitoring and Surveillance Plan 2011 Annual Report*.

2.7 Mill Operations

The total amount of waste and ore removed from the mine in 2011 was 33,448 tonnes and 142,315 tonnes, respectively. 34,275 tonnes of ore were from the Wolverine Zone and 107,850 tonnes were from the Lynx Zone. At the end of 2011 approximately 2,016 tonnes of ore were stockpiled, with grades of 7.07% Zn, 0.42% Cu, 0.87% Pb and 260 g/t of Ag.

Of the 175,763 tonnes extracted from the underground, 153,352 tonnes were milled with the average head grades of 8.26% Zn, 0.78% Cu, 1.13% Pb and 243 g/t Ag. The total amount and grade of concentrate produced, stockpiled, and transported from the Wolverine Mine is summarized in Table 2-1.

Table 2-1: Total Amount and Average Grade of Concentrate Produced, Stockpiled and Transported by End of 2011

Concentrate	Cu (%)	Pb (%)	Zn (%)	Ag (g/t)	Dry Milled Tonnes		
					Produced	Stockpiled	Transported
Cu	14.92	5.55	6.52	3511	3,200	315	2,889
Pb	3.17	15.49	8.70	2027	3,901	463	3,442
Zn	0.64	1.69	42.33	232	19,714	1,400	18,475

Details of humidity cell tests conducted for mine waste rock and ore analysis are provided in the *Wolverine Mine Monitoring and Surveillance Plan 2011 Annual Report*.

3 Annual Engineering Inspections

Three engineering inspections occurred in 2011 and subsequent reports were submitted to EMR within 45 days of the inspections being completed. The results of these inspections are summarized below, as are the actions taken to date by YZC.

3.1 Mill and Associated Infrastructure Inspection

An annual inspection of the mill and mine associated infrastructure (excluding the tailings storage facility) was conducted June 19 through 21, 2011 by EBA Engineering Consultants, and included a visual inspection of the following structures:

1. Industrial Complex – cut and fill slopes.

2. Industrial Complex Surface and Underground Water Treatment Sumps (1, 2, 3, 4 and 5) - liners and slopes.
3. Industrial Complex Diversion Ditch 1 – cut and fill slopes.
4. Industrial Complex Collection Ditches (2, 3, 4 and 5) – liners, cut and fill slopes.
5. Mine Camp Pad Area including upper generator and water treatment pad, sewage treatment plant pad, and treated effluent pond – liner, cut and fill slopes.
6. Temporary Waste Rock and Ore Storage Facility including seepage collection sump and ore waste stockpiles contained within the facility – cut and fill slopes.
7. Land Treatment Facility (Hydrocarbon Contaminated Material) including runoff collection sump – liners and fill slopes.
8. Vent Raise and Propane Tank Pad – cut slopes.
9. Truck Shop Pad – cut and fill slopes.

The report contained the recommendations for the inspected infrastructure, summarized in Table 3-1 with the corresponding actions taken by YZC in 2011. EBA concluded that all of tension cracks, sloughing, bubbling liner, erosion channels, and areas of settlement associated with the on-site earth structures pose no significant risk to the environment or human health and safety. However, these areas should be monitored and repaired as required.

Table 3-1 2011 Inspection Recommendations and Actions taken for Mill and Mine Associated Infrastructure

Structure	Recommendation	Actions
Industrial Complex	Noticeable erosion channels along the south western side of the mill fill created during spring melt. Erosion channels should be filled in with coarse grained material until proper perimeter berms can be completed to divert surface runoff towards drainage ditches.	Erosion channels along south western side of mill were filled, packed and graded
Industrial complex surface and underground water treatment sumps (1, 2, 3, 4 and 5)	Sumps 1 & 3: Noticeable settlement along the key trenches as the backfill material was not compacted during placement. These sumps are planned to be decommissioned in 2012. No other issues at this area. Sump #4: Decommissioned in August 2011.	None – to be completed in 2012
Collection Ditches 1, 2, 3, 4 & 5	Ditch 1: Noticeable tension cracks and an area of depression along the upper portion of the ditch embankment. Tension cracks should be filled to reduce the amount of water infiltration. Depression should be graded to match the upper and lower sections of the ditch embankment.	Monitored
	Ditch 3: Sediment in the bottom of the lined ditch. Tension crack along the upper portion of the outer slope. Sediment should be removed prior to freshet and tension cracks should be filled.	Ditch 3 is to be fully repaired (i.e., removed, re-graded and installed) in spring 2012

Structure	Recommendation	Actions
	Ditch 4: Many small tears along both sides of the ditch cause by snow removal prior to spring run-off. The side slopes require repair. A large tension crack is visible on the western side of the ditch. Additional repair work should be conducted to fill in the depression. Other erosion channels and tension cracks should also be filled in.	All tension cracks on either side of the ditch were filled and packed. A berm was also installed along the western side of the ditch as a precaution to prevent water from flowing over
	Ditch 5: Portion of the ditch filled with sediment, causing the water to pond and not drain towards the culvert that leads to Pond 2.	The ditch was regarded to encourage better flow
Mine camp pad area including upper generator and water treatment pad, sewage treatment plant pad and treated effluent pond	Noticeable tension cracks along the perimeter of the fill slope of the camp, upper generator and water treatment pads. These areas should be monitored and repaired as required.	Coconut matting, with seeding, was laid in areas of concern surrounding the water treatment pad. Tension cracks along the perimeter of the camp were monitored and filled as required
Temporary Waste Rock and Ore Storage Facility	Small tension tracks along the western side of the stockpile crest. Continue to monitor to see if they increase in size.	Monitored

3.2 Tailings Storage Facility Inspection

Weekly and monthly inspections of the tailings storage facility and associated infrastructure are conducted by site personnel. These include routine inspections regarding the condition of the dam, liner, diversion ditches, seepage collection system and spillways and pipelines. Monthly monitoring of the dam conditions includes inflows, outflows and water level elevation. Instrumentation (piezometers and inclinometers) is also downloaded monthly and the data reviewed for consistency.

A walkover inspection of the facility was carried out on July 19 by Klohn Crippen Berger. No significant observations were made that would suggest any concerns with the stability of the facility or its ability to store tailings as per the design. The recommendations from the report are as follows:

1. Continue to operate the facility as described in the *Operation, Maintenance and Surveillance Manual V2010-01*.
2. Prepare response plan to excavate starter spillway outlet at crest, to be triggered by the occurrence of a 200 year storm.
3. Continue monitoring the springs near the toe of the dam.

Since the report was issued, YZC has continued to operate the facility as per the OM&S Manual and is monitoring the facility monthly. The spring near the toe of the dam will be monitored in the spring.

3.3 Underground Mine Inspection

An inspection of the geotechnical aspects of the Wolverine underground mine was conducted by Swallow Services Ltd. Guidelines and recommendations contained within the report continue to be followed for underground mine development activities.

4 Hydrogeology Studies

Hydrological flow rates in the underground workings have been monitored since 2006; however, in 2007 – 2008 the rates were calculated based on discharge volumes from treatment sumps, whereas in 2009 -2011 the flow rates were more accurately monitored using a flow meter on the discharge pipe. These rates are presented in Figure 4-1. 2010 and 2011 values were similar, and increases during the summer months were evident in all three years. The average daily flow rates were 173 m^3/day, 257 m^3/day and 264 m^3/day in 2009, 2010 and 2011, respectively. In 2011 recharge rates ranged from 191 m^3/day (February 2011) to 405 m^3/day (September 2011) and indicate seasonal variations consistent with previous years.

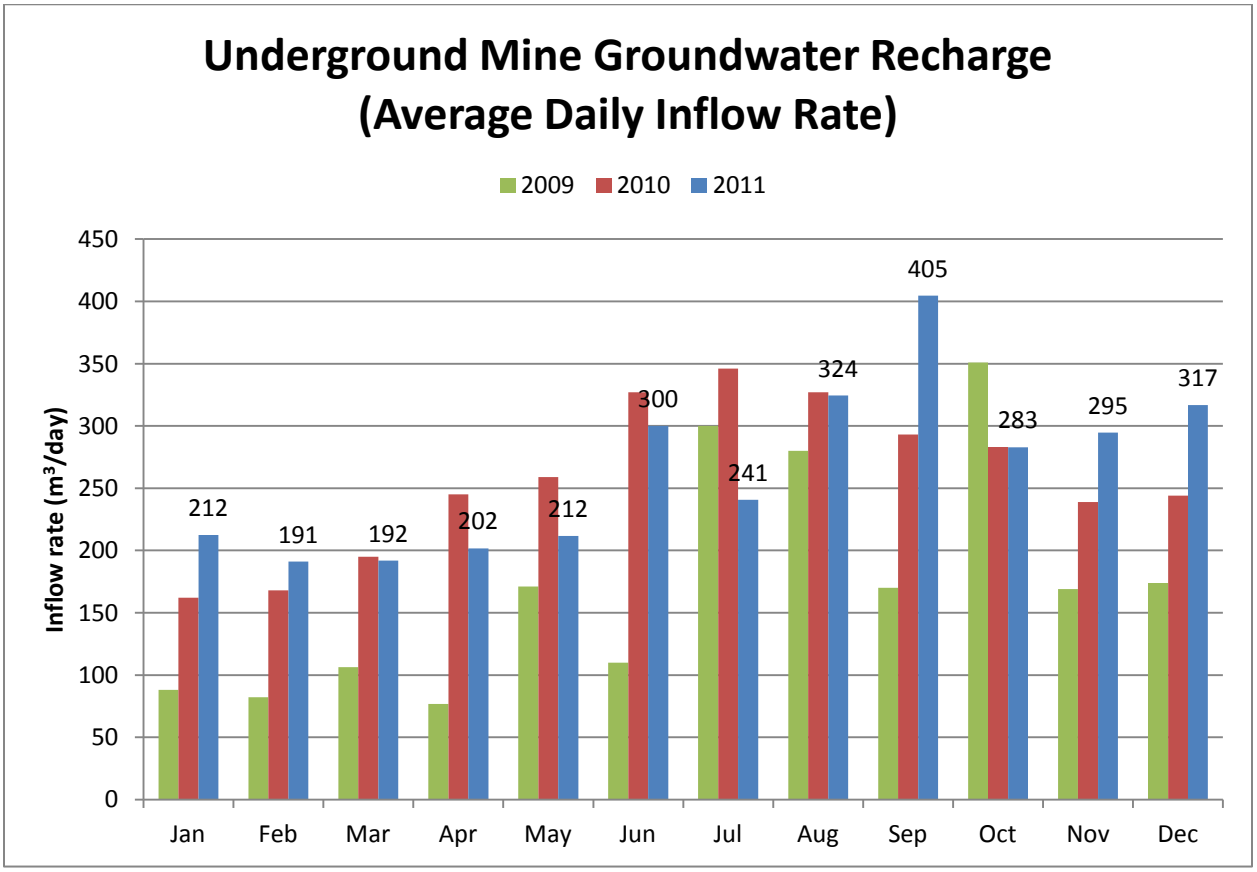


Figure 4-1: 2009-2011 Daily Average Underground Recharge Rates

5 Environmental Monitoring and Surveillance

As per annual report requirements, summaries are provided below for:

- Surface water quality monitoring and acute lethality testing; and,
- Groundwater quality monitoring in wells downslope of the mine workings.

In addition, Section 5.3 provides information on construction monitoring. Specific information on wildlife monitoring can be found in the *Wolverine Project Wildlife Protection Plan 2011 Annual Report,* and on environmental monitoring and surveillance in the *Monitoring and Surveillance Plan 2011 Annual Report*. Specific water quality results (i.e., laboratory reports) for surface and groundwater test work are provided in *Type A Water Use Licence QZ04-065 2011 Annual Report*, which is available upon request.

5.1 Surface Water Quality Monitoring and Acute Lethality Testing

Surface water quality monitoring for the purposes of baseline monitoring (as per Type A Water Use Licence QZ04-065) was taken at the locations and dates summarized in Table 5-1. A total of 197 sample sets were analyzed for physical parameters, TSS, dissolved and total metals (by ICP-MS) and mercury (by CVAS), as well as cyanide and dissolved organic carbon for select sampling sites (W16 & W31).

Because all underground water was sent, untreated, to the tailings storage facility in 2011, there were no discharges to the environment, and thus no acute lethality testing conducted in 2011.

Table 5-1: Surface Water Monitoring Sites and Sampling Frequency

Sampling Site	January	February	March	April	May	June	July	August	September	October	November	December
T1	04-Jan	20-Feb	26-Mar	19-Apr	21-May	08-Jun	02-Jul	06-Aug	07-Sep	04-Oct	03-Nov	02-Dec
L1	28-Jan	24-Feb	25-Mar	12-Apr	29-May	29-Jun	02-Jul	06-Aug	18-Sep	01-Oct	29-Nov	26-Dec
W1	A	A	25-Mar	12-Apr	A	30-Jun	03-Jul	03-Aug	12-Sep	01-Oct	A	A
W8	D	D	D	D	28-May	29-Jun	02-Jul	06-Aug	12-Sep		29-Nov	13-Dec
W9	D	D	D	D	28-May	29-Jun	02-Jul	06-Aug	12-Sep	02-Oct	29-Nov	13-Dec
W12	A	A	A	A	25-May	14-Jun	27-Jul	22-Aug	05-Sep	E	09-Nov	06-Dec
W14	A	A	A	A	25-May	14-Jun	27-Jul	22-Aug	E	E	09-Nov	06-Dec
W15	31-Jan	21-Feb	28-Mar	23-Apr	25-May	10-Jun	2-Jul	1-Aug	11-Sep	12-Oct	9-Nov	1-Jan
W16	30-Jan	20-Feb	27-Mar	23-Apr	20-May	08-Jun	02-Jul	01-Aug	02-Sep	03-Oct	09-Nov	02-Dec
W21	02-Jan	13-Feb	19-Mar	13-Apr	14-May	12-Jun	01-Jul	05-Aug	10-Sep	30-Sep	05-Nov	03-Dec
W22	02-Jan	20-Feb	19-Mar	13-Apr	14-May	12-Jun	01-Jul	05-Aug	10-Sep	30-Sep	05-Nov	03-Dec
W31	D	D	D	D	17-May	08-Jun	01-Jul	06-Aug	07-Sep	03-Oct	06-Nov	26-Dec
W40	02-Jan	20-Feb	19-Mar	13-Apr	14-May	12-Jun	01-Jul	05-Aug	10-Sep	02-Oct	05-Nov	03-Dec
W71	22-Jan	18-Feb	19-Mar	18-Apr	14-May	06-Jun	01-Jul	05-Aug	03-Sep	30-Sep	05-Nov	04-Dec
W72	22-Jan	18-Feb	19-Mar	18-Apr	14-May	6-Jun	1-Jul	5-Aug	3-Sep	30-Sep	5-Nov	4-Dec
W73	22-Jan	18-Feb	19-Mar	18-Apr	20-May	06-Jun	01-Jul	05-Aug	03-Sep	30-Sep	05-Nov	04-Dec
W80	A	13-Feb	A	19-Apr	25-May	14-Jun	27-Jul	15-Aug	E	31-Oct	09-Nov	06-Dec
W81	31-Jan	28-Feb	28-Mar	23-Apr	25-May	10-Jun	02-Jul	01-Aug	11-Sep	09-Oct	28-Nov	31-Dec
W82	05-Jan	22-Feb	30-Mar	23-Apr	21-May	10-Jun	02-Jul	11-Aug	09-Sep	03-Oct	03-Nov	18-Dec

A = Site not sampled due to lack of safe access

D = Site dry (i.e., all water tied up in storage) or frozen through to ground

E = Transportation equipment under repair

5.2 Groundwater Quality Monitoring

Groundwater wells downslope of the mine workings were sampled quarterly in 2011, until June 2011 when the mine was deemed to be in “operations” and sampling frequency increased to monthly, as required by A Licence QZ04-065. Sampling dates for groundwater wells downslope of the mine workings are summarized in Table 5-2. Gaps in Table 5-2 represent dates when the wells were frozen, and samples were not able to be taken. A total of 24 sample sets were collected from the groundwater wells downslope of the mine workings, and they were analyzed for physical parameters, TSS, dissolved metals (by ICP-MS) and mercury (by CVAS).

Table 5-2: Groundwater Monitoring Sites and Sampling Frequency

Sampling Site	March	June	July	August	September	October	November	December
MW05-3A		27-Jun	06-Jul	09-Aug	20-Sep			
MW05-3B		27-Jun	06-Jul	09-Aug	20-Sep			
MW05-5A	17-Mar	26-Jun	06-Jul	09-Aug	19-Sep	22-Oct	26-Nov	27-Dec
MW05-5B		26-Jun	06-Jul	09-Aug	19-Sep			
MW06-11S		24-Jun	05-Jul	09-Aug	19-Sep			

5.3 Environmental Monitoring for Construction Activities

Environmental monitoring reports for all construction activities were prepared by the YZC Environmental Department during the 2011 construction activities. Table 5-3 summarizes the Environmental Monitoring Reports prepared (detailed reports provided in Appendix A), including the area monitored, the monitoring period and the date of the monitoring report (which is the same as the last monitoring period).

Table 5-3: 2011 Summary of Completed Environmental Monitoring Reports by Area

Monitoring Period*		Monitoring Period*	
From	**To**	**From**	**To**
Access Road		**Operations Phase Waste Rock Pad**	
11-Mar	18-Mar	01-Sep	22-Sep
18-Mar	27-Mar	23-Sep	01-Oct
30-Mar	14-Apr		26-Sep
28-Apr	11-May		30-Sep
13-May	25-May	02-Oct	14-Oct
18-Jun	21-Jun		04-Oct
26-Jul	28-Jul		08-Oct
01-Jul	14-Sep		09-Oct
Access Road – Sediment and Erosion Monitoring			11-Oct
	17-Jun	15-Oct	18-Oct
Access Road - Creek Monitoring		18-Oct	21-Oct
28-Apr	11-May		29-Oct
	27-May		30-Oct
Incinerator/Landfill			31-Oct
	11-Oct		01-Nov
Industrial Complex			02-Nov
31-Mar	14-Apr		03-Nov
23-Apr	24-Apr		09-Nov
Special Waste Pad			12-Nov
	22-Feb	**Temporary Waste Rock Pad**	
	01-Nov	30-Mar	14-Apr
	07-Dec		17-Jun
Tailings Storage Facility		**Truck Shop**	
28-Apr	11-May		04-Oct

* If no value in the “from” column, the monitoring period was a single day.

6 Environmental Incidents

There were five reportable spills (defined by the *Yukon Spills Regulations* as "a release of a hazardous substance to the environment in quantities above the spill reporting thresholds, or any amount of spill onto a watercourse") and six unauthorized discharges in 2011 (Table 6-1). Spills were immediately reported and full spill reports were submitted to EMR within 10 days of their respective occurrences. Follow up reports were submitted upon receipt of laboratory results, as required.

Table 6-1: Environmental Incidents in 2011

Date	Volume and Substance	Cause	Reporting and Follow-up Actions
08-Jan-11	~450L camp waste water effluent	A weak connection from the pipe draining the kitchen's waste water.	Initial Report: 10-Jan-11
16-Jan-11	~1.5 m^3 tailings reclaim effluent	An excavator working in the area damaged the reclaim pipeline that pumps tailings water for recycling in the mill.	Initial Report: 17-Jan-11 Follow-up Report: 11-Feb-11
16-Feb-11	~0.2 – 0.3 m^3 reclaim tailings effluent	Underflow volume of tailings thickener was reduced due to suspect partial blockage in the underflow line.	Initial Report: 16-Feb-11
14-Mar-11	~50 L mine effluent	High backpressure in discharge line caused a hose to split and spry mine effluent.	Initial Report: 14-Mar-11
5-Apr-11	~500 L untreated camp grey water	A broken connection in the pipe draining the kitchen waste water.	Initial Report: 8-Apr-11
4-May-11	~100 L waste oil	Damage to the base of a metal drum resulted in a slow leak.	Initial Report: 13-May-11
12-Aug-11	~50 m^3 industrial complex runoff	The liner was compromised (i.e., numerous small holes) after an attempt was made to remove the sediment from Ditch 3.	Initial Report: 18-Aug-11 Follow-up Report: 7-Sept-11
22-Aug-11	~50 L potassium amyl xanthate (PAX)	During the removal of a PAX stock tank, the forklift operator tipped the tank over.	Initial Report: 25-Aug-11
25-Sept-11	~1,256 kg copper concentrate	A concentrate bag fell off the transport truck at km 68.1 of the Robert Campbell Highway.	Initial Report: 26-Sept-11
25-Oct-11	~40 L Waste Oil	Dispensing hose came off the pump at the clamp.	Initial Report: 27-Oct-11
2-Nov-11	~10 L antifreeze	A loose fitting came off the truck.	Initial Report: 2-Nov-11

7 Access Road Operation

Access road activities outlined in the sections below include the 2011 use, maintenance work, access control, and road upgrade or maintenance activities.

7.1 2011 and Projected 2012 Use

In 2011, all freight and service vehicles entering and exiting site were recorded by site security and are summarized by month in Table 7-1. The total annual access road usage for 2011 was 3430 vehicles and characterized as follows:

- 1866 freight truck deliveries to supply materials for construction and day to day operations;
- 974 concentrate trucks;
- 590 light vehicles; and

Table 7-1: 2010 Access Road Vehicle Usage

Month	Vehicle Traffic
January	162
February	59
March	206
April	306
May	204
June	35
July	353
August	296
September	336
October	354
November	419
December	385
Total	**3430**

In 2012, the number of concentrate haul trucks and service vehicles on the road is anticipated to be similar to the latter half of 2011, for a daily average of 10.

7.2 2011 Work and Upgrades Conducted

Improvements to the access road included widening, raising and reducing grade, ditching and drainage control, decreasing side slopes, installation of berms, improvements to existing and additional pull out bays, surfacing and defining shoulders. Culverts and culvert extensions were installed and rip rap was placed at culvert entrances. All these works were ongoing throughout the spring, summer and fall months as the need arose.

Major upgrades were undertaken at KM 4 + 500, KM 9 – KM 9 +800, KM 19, and KM 21 + 500, to help improve water diversion, road and ditch stability, and reduce sediment load. Major improvements were also done at KM 27 + 200 for safe access to the YZC camp.

Sediment and erosion control was conducted throughout construction and included silt fence installation, geotextile installation, and temporary sump construction with controlled pumping.

Picture 7-1: Re-contouring/widening of road and installation of geotextile and rocks to stabalize slopes and reduce high energy flows

Picture 7-2: Installation of geotextile and re-grading at KM 4.5 where permafrost was an issue

Picture 7-3: Installation of a culvert at KM 19 to divert heavy flow

Picture 7-4: Repair of undermined culvert at KM 21

Picture 7-5: Initial stages of road improvement measures at KM 27 + 200

Picture 7-6: Final stages of road improvement measures at KM 27 + 200

7.3 Access Control Issues

There have been no issues with access control. There are two Wolverine Mine Access Control Gates at km 0.1 and km 0.49, to prevent public use of the access road. A radio-controlled automated gate opener was installed at the gate at km 0.1 in 2008 and is currently in use. Routine patrols were carried out along the access road during each shift. All vehicles entering and leaving the site are required to call security, via radio, to gain access/exit through the radio-controlled gate.

7.4 Projected Road Construction Activities

YZC will continue with road improvements for concentrate haul trucks and service vehicle use as needed in 2012.

7.5 Wildlife Incidents or Other Accidents

In March 2011 there was an incident on the access road at approximately km 27. A light vehicle truck struck two ptarmigan that were feeding on sand that had been spread on the road. One ptarmigan was killed, and while the other flew away it appeared to be injured. No other incidents or accidents were reported for 2011.

8 Reclamation Activities

In 2011, the focus of activities was the completion of surface construction activities and improvements to the access road. Construction activities undertaken in 2011 include:

1. Installation of the truck shop and batch plant within the industrial complex to support underground development work.
2. Preparation of the eastern most end the mill pad for the installation of a sprung structure (previously used to house sump 3) as a reagent storage facility.
3. Construction of a waste rock pad at KM 25 + 500.

All activities were completed within defined footprints and impacts minimized as necessary to lessen reclamation requirements. The overburden removed from the area prepared for the waste rock pad was stockpiled along the side of the Access Road between KM 25 + 200 and 25 + 500, and a small ditch was prepared to intercept any surface water and divert it to Go Creek. Several interconnecting french drains were installed beneath the future waste rock pad to control flow through and stabilize surrounding soil.

Picture 8-1: Final stages of organic stockpiling at KM 23.3 from Waste Rock Pad construction

Picture 8-2: French drains installed under waste rock pad to control water flow and statbalize surrounding soil.

Progressive reclamation activities were completed during access road improvements, mainly including:

1. Roadside slope stabilization and re-contouring of slopes followed by placement of organic material and large wood debris.
2. In areas where permafrost was encountered, installation and repair of pre-existing geotextile and coconut matting was undertaken along sections of road where erosion was evident.
3. Coconut matting and seeding was applied to the steep slopes surrounding the Sewage Treatment Plant to increase stability of the area.
4. Ongoing installation/maintenance of silt fence and use of straw bales in areas prone to high flows and potential sediment load.

Picture 8-3: Installation of large rocks and silt fence to reduce flow energy and sediment load, respectively

Picture 8-4: Installation of coconut matting and seeding along side of road where permafrost was evident

8.1 Closure Trials

Bench scale test work for the bio-pass system was completed in 2010, with the data analysis on-going throughout 2011. While the 2010 bench scale work was successfully able to remove selenium, sulphate, cadmium and zinc from a contaminated influent, further bench scale work is required to evaluate the effectiveness of the treatment system in removing iron, molybdenum, aluminum and arsenic. The additional bench scale work is required prior to completing the design of the field test. The additional bench scale work is proposed to occur in 2013, with the design of the field test to be completed by 2014.

9 Socio-Economic Assessment

The EA Screening Report requires that YZC report annually on the following:

- The number of Yukoners and non-Yukoners employed at the mine; and,
- The value of goods and services procured within Ross River, Watson Lake and the Yukon as a whole.

Over the course of the year, 116 Yukoners and 303 non-Yukoners were employed at the project site by YZC and numerous contracting companies. The main contractors included Procon Mining and Tunnelling Ltd, Arctic Construction Ltd., and ESS Compass Canada. Wages from the local region are not included in the totals below.

The value of goods and services procured from Ross River, Watson Lake and the Yukon in 2011 is provided in Table 9-1. In addition to these Yukon Zinc expenditures, the Kaska First Nation communities (Ross River, Watson Lake and three in northern BC), who formed joint venture businesses with Arctic Construction Ltd., ESS Compass, Maple Leaf Loading, Procon Mining and Tunnelling, and Tu Lidlini/Alberta Fuel Distributors shared payments in 2011 estimated at $1.31 million.

Table 9-1: Goods and Services Procured from Ross River, Watson Lake and the Yukon for 2011

Location	Amount
Ross River	$85,200
Watson Lake	$341,600
Yukon	$20,690,000
Kaska Joint Venture Businesses	~$1,310,000

10 Project Development and Production for 2012

In 2012, stopes will continue to be developed for ore extraction. The projected amount of ore to be mined from underground workings is 358,800 tonnes (Table 10-1).

Table 10-1: Planned Total Ore to be Mined from Underground in 2012

Stope Level	Total Ore for 2012 (tonnes)
1300	76,605
1280	32,939

Stope Level	Total Ore for 2012 (tonnes)
1270	25,028
1260	31,950
1250	22,594
1240	24,647
1230	23,582
1220	39,786
1210	20,844
1200	18,942
1190	20,540
1180	22,213
1170	24,952
1160	25,560
1150	13,237
1140	7,607
1130	17,268
1120	7,607
1110	9,889
1100	4,793
1080	1,217
Total	**471,802**

Projected concentrate production in 2012 is summarized in Table 10-2 for lead, copper and zinc concentrates.

Table 10-2: Concentrate Production Estimated for 2012

Variable	Dry Milled Tonnes
Copper Concentrate	11,885
Lead Concentrate	12,324
Zinc Concentrate	76,806
Total Concentrate Produced	**101,015**

Appendix A: Environmental Monitoring Reports

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: March 18, 2011	Inspector(s): Matt Kawei
Site Name: Access Road (km 24 to 0)	Location/Co-ordinates: Access Road to site
Weather Conditions: Sunny, excellent visibility, variable winds. Air temperature: -3.1°C.	

Part 2 – Site Assessment

Activity:

- Road maintenance pretty good except for some areas along the access road
  - **Km 12.2:** Drainage (left side heading towards km 12) frozen and with temperature raising, water coming across the road and freezing. This can pose a hazard for vehicles and to some extent wildlife crossing along this section of the road at this time of the year (see photo 1).
  - **Km 10.1**: - Frozen culvert (pool of water frozen – left side of culvert heading towards Km 10 – see photo 2).
  - **Km 4.5**: Frozen culvert allowing water to freeze along the drainage system and onto the road. This can pose a hazard for vehicles and wildlife using this section of the road at this time of the year (see photos 3, 4 & 5).
  - **Km 2.8**: Frozen culvert allowing water to pool and freeze at this section of the road (see photo 6).

Site Status:

- As the temperature keeps rising, we will continue to have blocked culverts along the access road. This will pose a hazard both to travelling vehicles and wildlife using respective portions of the road.

Assessed Risk: Current risk level is **low**, but can move to **medium** depending on the measure taken to rectify the situation and how fast the temperatures rises in the coming days.

Photos Attached: Yes

Samples Taken: Not applicable

Additional Information Attached: No

Part 3 –Mitigation Requirements

Mitigation Required: Culverts at these locations needs to be cleared allowing water to drain through the proper drainage system.

Mitigation Condition: Ongoing

Part 4 –Monitoring Requirements

Follow-up Monitoring: Regular inspections along the access road by Site Services and Environmental personnel

Monitoring Frequency: Weekly to regularly depending on the air temperature and access road conditions.

Reporting Requirements: As required.

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access Road to mine site	**Date:** March 18, 2011
	
Photo 1 (11/03/18): Frozen water within the drainage and across the road at Km 12.2 along the access road (looking towards Km 12 signage).	**Photo 2 (11/03/18):** Frozen culvert at Km 10.1 allowing water to pool and freeze.
	
Photo 3 (11/03/18): Looking towards Km 4.5. Frozen culvert below the gravel pit and pull out at Km 4.5 allowing water to pool and coming across the access road.	**Photo 4 (11/03/18):** Water across the road at Km 4.5 looking towards Km 4 signage.

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access Road to Mine site	**Date:** March 18, 2011
	
Photo 5 (11/03/18): Extent of frozen water at Km 4.5. The borrowed pit if to the left of the photo (looking toward Km 4 signage)	**Photo 6 (11/03/18):** .Looking west – pool of frozen water at Km 2.8. Culvert frozen thereby not allowing water to flow through.

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: March 27th ,2011	Inspector(s): Jaymie Skidmore/Robin Mccall
Site Name: Access Road	Location/Co-ordinates: Km 0 - Km 32
Location Description: The Wolverine Mine site access road starts at Km 190 on the Robert Campbell Hwy and ends at the YZC Exploration Camp at Wolverine Lake. The total length of the access road is 32 Km and passes through several different bioclimatic regions. The key water crossings include; Pitch, Putt, Bunker, Chip and Bogey, Hawkowl, Go and Campbell Creeks.	
Weather Conditions: Spring weather conditions, daily temperature averages to date range from 0°C to 10°C. Mostly sunny.	
Part 2 – Site Assessment	
Activity: - Clearing of ditches along the access road to allow the runoff to flow freely. - Culvert steaming to allow drainage - Diversion of runoff towards culverts and ditches - Glacier at Pitch Creek partially broken up by an excavator to encourage flow.	
Site Status: - Flows of creeks and ditches increasing due to warmer weather. - Glacier at Pitch Creek is thawing. Water is unable to flow through culvert due to ice blockage. - Melt along the road is increasing daily.	
Assessed Risk: Low	
Photos Attached: Yes	
Samples Taken: No	
Additional Information Attached: No	
Part 3 –Mitigation Requirements	
Mitigation Required: Clearing drainages and culverts to allow free flow of runoff.	
Mitigation Condition: good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Follow-up when change in condition occurs.	
Monitoring Frequency: Monitor weekly (minimum) until runoff and freshet subsides.	
Reporting Requirements: Environmental monitoring reports to be done in the event of a significant change.	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access road creeks and ditches	**Date:** March 27th, 2011
	
11/03/27 Pitch Creek - upstream glacier	**11/03/27** Pitch Creek - upstream glacier
	
11/03/27 Km 10 ditch overflow. Culvert needs to be steamed in order for runoff to flow freely.	**11/03/27** Site services crew preparing to steam culvert at Km 10

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: March 30th – April 14th, 2011	Inspector(s): Jennie Gjertsen and Matt Kawei
Site Name: Access Road	Location/Co-ordinates: Wolverine access road - Km 0 to Km 32
Site Location Description: The Wolverine Mine site access road starts at Km 190 on the Robert Campbell Hwy and ends at the YZC Exploration Camp at Wolverine Lake. The total length of the access road is 32 Km and passes through several different bioclimatic regions. The key water crossings include; Pitch, Putt, Bunker, Chip and Bogey, Hawkowl, Go and Campbell Creeks.	
Weather Conditions: Early spring conditions, some periods of snowfall. Mostly freezing temperatures overnight warming to above 0°C during the day.	
Part 2 – Site Assessment	
Activity: - Steaming culverts, some culverts require steaming multiple times, as they are freezing during cold temperatures at night. - Maintenance at areas of ice floes - Monitoring of runoff conditions - Pools of water pumped across road with mobile pumps	
Site Status: - Road drying in most areas - Culverts being maintained	
Assessed Risk: Low	
Photos Attached: Yes	
Samples Taken: No	
Additional Information Attached: No	
Part 3 –Mitigation Requirements	
Mitigation Required: Steaming culverts and managing water.	
Mitigation Condition: fair	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Continue to monitor road drainages, as well as areas of ice and water accumulation. During runoff, monitor for sediment loading in ditches and drainages. Monitor for areas where mitigation needs repair as snow melts (i.e. silt fencing, coconut matting etc.)	
Monitoring Frequency: Minimum once a while runoff continues and during freshet.	
Reporting Requirements: Environmental monitoring reports to be done in the event of a significant change or concern	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access Road

Date: March 30th – April 14th, 2011

11/04/01 Km 23+050 blocked culvert requiring steaming

11/04/01 Km 10 blocked culvert requiring steaming

11/04/08 Km 4+500 blocked culvert requiring steaming

11/04/08 Pooling water and mud at lower bypass Km 27+300

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access Road	**Date:** March 30th – April 14th, 2011
	
11/04/08 Km 23+050 cleared culvert allowing road to dry	**11/04/08** Km 18 plateau road drying well after snow pushed back.
	
11/04/08 Km 10 blocked culvert requiring steaming again	**11/04/08** Localised snow melt at Km 5 causing some road saturation.

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access Road	**Date:** March 30th – April 14th, 2011
	
11/04/12 Km 10 blocked culvert causing overflow over road.	**11/04/12** Km 10 runoff cutting into road. Mitigated with mobile pumps (trash pump). No further erosion occurred once installed.

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: April 28th – May 11th, 2011	Inspector(s): Jennie Gjertsen
Site Name: Access Road	Location/Co-ordinates: Wolverine access road - Km 0 to Km 32
Site Location Description: The Wolverine Mine site access road starts at Km 190 on the Robert Campbell Hwy and ends at the YZC Exploration Camp at Wolverine Lake. The total length of the access road is 32 Km and passes through several different bioclimatic regions. The key water crossings include: Pitch, Putt, Bunker, Chip, Bogey, Hawkowl, Go and Campbell Creeks.	
Weather Conditions: Early spring conditions, some periods of snowfall. Mostly freezing temperatures overnight warming to above 0°C during the day.	
Part 2 – Site Assessment	
Activity: - Monitoring spring conditions on road - Some trash at gate laydown - truck companies notified that littering is not acceptable, trash to be disposed of on site	
Site Status: - Road completely dry in most areas - No remaining ice floe issues, except glaciation at Pitch Creek - Some erosion control measures put in last year need to be fixed/maintained	
Assessed Risk: Low	
Photos Attached: Yes	
Samples Taken: No	
Additional Information Attached: No	
Part 3 –Mitigation Requirements	
Mitigation Required: Repairs to erosion control measures (i.e. coconut mats, silt fencing).	
Mitigation Condition: Fair. Work to be done when ground is thawed and manpower availability allows.	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Continue to monitor road drainages. Continue monitoring runoff for sediment loading in ditches and drainages.	
Monitoring Frequency: Minimum once a week while runoff continues and during freshet.	
Reporting Requirements: Environmental monitoring reports to be done in the event of a significant change or concern	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access Road	**Date:** April 28th – May 11th, 2011
	
11/04/30 some erosion/rills in borrow pits	**11/04/30** Coconut matting in good repair, monitor for revegetation in summer
	
11/04/30 Km 9+500 Sloughing on bank, matting needs repair and reseeding.	**11/05/04** Trash left at gate laydown and cleaned up

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access Road	**Date:** April 28th – May 11th, 2011
	
11/05/05 Slope at Pitch creek showing signs of successful revegetation	**11/05/05** Road conditions dry and in good shape

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: May 13th – May 25th, 2011	Inspector(s): Robin McCall
Site Name: Access Road	Location/Co-ordinates: Wolverine access road - Km 0 to Km 32
Site Location Description: The Wolverine Mine site access road starts at Km 190 on the Robert Campbell Hwy and ends at the YZC Exploration Camp at Wolverine Lake. The total length of the access road is 32 Km and passes through several different bioclimatic regions. The key water crossings include: Pitch, Putt, Bunker, Chip Bogey, Hawkowl, Go and Campbell Creeks.	
Weather Conditions: Spring conditions, short periods of rainfall. Average daily temperature of 10 ^{o}C.	
Part 2 – Site Assessment	
Activity: - Monitoring spring runoff along ditches and through culverts – looking for sedimentation, slumping, and permafrost conditions - Re-established silt fencing at various locations from KM 19 to 27 (Photo 1 and 2) and established rock blocks with straw to reduce sedimentation (Photos 3) - Culvert at KM 19.5 was undermined by fast flowing water, creating a tunnel beneath the road (Photos 4 – 6). The soil around the culvert was removed and better material was placed and packed around it to encourage water to flow through the culvert (Photos 7 – 9). - Some trash at various locations along the Access Road was collected	
Site Status: - Two areas on the road between KM 19 and 20 are seeping water (photos 10 -12) - Some sloughing of coconut matting between KM 9 and 10 - Undermined culvert at KM 19.5 was repaired and is safe to travel on - Still some erosion control measures put in last year need to be fixed/maintained	
Assessed Risk: Low	
Photos Attached: Yes	
Samples Taken: No	
Additional Information Attached: No	
Part 3 –Mitigation Requirements	
Mitigation Required: Repairs to current erosion control measures need to continue (i.e. coconut mats, silt fencing).	
Mitigation Condition: Fair. Work to be done when ground is thawed and manpower availability allows.	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Continue to monitor road drainages. Continue monitoring runoff for sediment loading in ditches and drainages. Continue to monitor seepage in roads.	
Monitoring Frequency: Minimum once a week while runoff continues and during freshet.	
Reporting Requirements: Environmental monitoring reports to be done in the event of a significant change or concern.	

Wolverine Project
Environmental Inspection Form

Site Name: Access road	**Date:** May 11th – May 25th, 2011
	
Photo 1 (11/05/18) Diversion ditch at KM 19.5 before erosion control measures installed – straw placed along space below silt fence to filter sediment	**Photo 2 (11/05/19)** Diversion ditch at KM 19.5 after erosion control measures
	
Photo 3 (11/05/18) Rock blocks with straw installed upstream of culvert inlet at KM 19.5	**Photo 4 (11/05/18)** Cave-in on road caused by culvert being undermined by high water flow

Site Name: Access Road	**Date:** May 11th – May 25th, 2011
	
Photo 5 (11/05/18) Cave-in at KM 19.5 due to culvert being undermined by water	**Photo 6 (11/05/18)** Downstream side of culvert at KM 19.5 showing tunnel
	
Photo 7 (11/05/18) Initiation of excavation and backfill to support culvert repair at KM 19.5	**Photo 8 (11/05/18)** Excavation and backfill to support culvert repair at KM 19.5

Wolverine Project
Environmental Inspection Form

Site Name: Access Road	**Date:** May 11th – May 25th, 2011
	
Photo 9 (11/05/18) Culvert repair at KM 19.5 completed	**Photo 10 (11/05/20)** Water seeping from middle of road at KM 20
	
Photo 11 (11/05/20) Pool of water at KM 19.2 – may be seeping through road	**Photo 12 (11/05/20)** More water seeping through ground and may be sourced from opposite side of road

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: June 18,19 and 21st , 2011	Inspector(s): Jaymie Skidmore
Site Name: Access Road Km 27.2 Intersection Km 24.5 access to the tailings dam	Location/Co-ordinates: Wolverine access road - Km 0 to Km 32
Site Location Description: The Wolverine Mine site access road starts at Km 190 on the Robert Campbell Hwy and ends at the YZC Exploration Camp at Wolverine Lake. The total length of the access road is 32 Km and passes through several different bioclimatic regions. The key water crossings include: Pitch, Putt, Bunker, Chip Bogey, Hawkowl, Go and Campbell Creeks.	
Weather Conditions: Spring conditions, periods of rainfall. Average daily temperature of 10°C.	
Part 2 – Site Assessment	
Activity: - Widening toward the south to allow double lane traffic km 27.2 - Elevating the road to decrease the grade km 27.2 - Re-ditching to allow runoff to drain towards the culvert km 27.2 - Installing a culvert km 27.2 - Straitening the intersection out and reducing the "S" shape. Km 27.2 - Installing a culvert at km 24.5 to deter runoff from flowing into the tailings seepage collection pond.	
Site Status: - Currently under construction	
Assessed Risk: Low	
Photos Attached: Yes ( )	
Samples Taken: No	
Additional Information Attached: No	
Part 3 –Mitigation Requirements	
Mitigation Required: None	
Mitigation Condition: Good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Environmental monitoring report to be done during start and finish of construction.	
Monitoring Frequency: Daily	
Reporting Requirements: Environmental monitoring reports to be done in the event of a significant change or concern.	

Wolverine Project
Environmental Inspection Form

Site Name: Access Road Km 27.2 Intersection	**Date:** June 18, 2011
	
Photo 1 (11/06/18)	**Photo 2 (11/06/18)**
	
Photo 3 (11/06/18)	**Photo 4 (11/06/18)**

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: July 26th and 28th, 2011	Inspector(s): Christina Magun
Site Name: Access Road	Location/Co-ordinates: Wolverine access road - Km 0 to Km 32
Site Location Description: The Wolverine Mine site access road starts at Km 190 on the Robert Campbell Hwy and ends at the YZC Exploration Camp at Wolverine Lake. The total length of the access road is 32 Km and passes through several different bioclimatic regions. The key water crossings include: Pitch, Putt, Bunker, Chip Bogey, Hawkowl, Go and Campbell Creeks.	
Weather Conditions: Late summer conditions, frequent and heavy rainfall over the summer.	
Part 2 – Site Assessment	
Activity: - Follow report to EMR inspection report	
Site Status: From July EMR inspection: - Between Km1-3 erosion and sloughing along creeks and ditches - Potential runoff in KM 4.6 sloughing and rilling at borrow source - Km 9.5 sloughing and possible sedimentation into lake - Km 11.5 potential sedimentation from borrow source access - Km 19 ditching and water control required at cobble borrow	
Assessed Risk: Low	
Photos Attached: Yes	
Samples Taken: No	
Additional Information Attached: No	
Part 3 –Mitigation Requirements	
Mitigation Required: Repairs to current erosion control and sloughing. Installation of new erosion control measures and seeding	
Mitigation Condition: Fair. Some repairs done to road. Still requires increased mitigation as equipment and manpower allows.	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Continue monitoring runoff for sediment loading in ditches and drainages. Monitor Km 9,5 closely for sloughing.	
Monitoring Frequency: Weekly, more frequently during heavy rainfall periods	
Reporting Requirements: Environmental monitoring reports to be done in the event of a significant change or concern.	

Wolverine Project
Environmental Inspection Form

Site Name: Access road	**Date:** July 26th and 28th, 2011
	
KM11.2 Erosion in the ditch	**KM6.2** Repairs to the road
	
KM11 Water rills throughout the road going into the ditch across road, loose sandy material	**KM17** Erosion into the road

Wolverine Project
Environmental Inspection Form

Site Name: Access Road	**Date:** July 26th and 28th, 2011
	
KM 4.1 Road repair with Backhoe, culvert repair and ditch was stabilized.	**KM 9.5** Sediment and erosion control needs repair, and needs permafrost stabilized upslope and down slope.

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: July 1st to September 14th, 2011	Inspector(s): Matt Kawei
Site Name: Access Road	Location/Co-ordinates: Wolverine access road - Km 0 to Km 32
Site Location Description: The Wolverine Mine site access road starts at Km 190 on the Robert Campbell Hwy and ends at the YZC Exploration Camp at Wolverine Lake. The total length of the access road is 32 Km and the route passes through several different bioclimatic regions. The key water crossings include: Pitch, Putt, Bunker, Chip, Bogey, Hawkowl, Go and Campbell Creeks.	
Weather Conditions: Late summer conditions, frequent and heavy rainfall over the summer and fall.	

Part 2 – Site Assessment

Activity: This report details the progress on the concerns raised in the EMR inspection report, dated July 5th 2011.

Site Status:

Concern	**Progress**	**Assessed Risk**
1) Between Km 1-3 erosion and sloughing along creeks and ditches.	Grader has worked road surface and ditches, armouring still to be done.	LOW Regular maintenance and monitoring are required especially during critical periods (e.g., during heavy down pour & spring freshet)
2) KM 4.6 sloughing and riling at borrow source (Photo 1 and 2).	Gravels and sand were hauled in and placed on either side of the culvert. On the east side of the road, geo-membrane cloth was placed in the ditch and rip-rap materials placed over the cloth (Photo 3). On the west side of the road, additional sand/gravel materials were placed along the slope and around the culvert and packed in with a backhoe (Photo 4).	LOW The concern has been mitigated. Continue with ongoing road inspection protocol.
3) Km 9.5 sloughing and possible sedimentation into lake (Photo 5).	No mechanical work was carried out in this area due to poor weather conditions (i.e., consistent heavy rain periods) and related safety concerns. This area was monitored closely for any potential sedimentation into the Lake, and noted that 1) there was an evident reduction in water seepage along the slope (Photo 6), and 2) of the two rows of silt fence that were installed in 2010 along the toe of the slope, a portion of the 1st silt fence barrier is covered by the advance of the unstable soil/gravel while the 2nd silt fence remains intact (i.e., no evidence of sedimentation through 2nd silt fence barrier) (Photo 7). However, to encourage stabilization of the slope, roadside seed was spread over the area, and growth from this effort has already been observed	LOW 2nd silt fencing barrier currently in place, and new grass growth along the toe of the slope.

	(Photo 8).	
4) Km 11.5 potential sedimentation from borrow source access.	The culvert at KM 11.5 was extended with supporting rip-rap to reduce incoming water energy (Photo 9), and the cut and fill slope from the access road to the sand screen plant was repacked (Photo 10).	LOW The potential impact still exists depending on traffic frequency along this section of the borrow source access road during winter/spring season
5) Km 19 ditching and water control required at cobble borrow.	Installation of culvert and armouring just below cobble borrow at KM 19 (Photos 11 & 12).	LOW The concern has been mitigated.

Photos Attached: Yes

Samples Taken: No

Additional Information Attached: No

Part 3 –Mitigation Requirements

Mitigation Required: No further mitigation required.

Mitigation Condition: Good

Part 4 –Monitoring Requirements

Follow-up Monitoring: Regular inspections along the access road by Site Services and Environmental personnel.

Monitoring Frequency: Increase frequency from weekly to twice a week during critical periods (heavy rains & spring freshet)

Reporting Requirements: Environmental monitoring reports to be done in the event of a significant change or concern.

Site Name: Access road (KM 4.6)	**Date:** July 1 to September 13, 2011
	
Photo 1 (July 1, 2011): km 4.6 Looking north - tension crack on east side of road.	**Photo 2** (July 1, 2011): km 4.6 Looking north - tension cracks & erosion channels on west side of the road.
	
Photo 3 (Sept 13, 2011): km 4.6 Looking south - fill-in tension cracks; laid geo-membrane and placed rip rap on east side of road fill slope.	**Photo 4** (Sept 13, 2011): km 4.6 Looking north - fill-in tension cracks and erosion channels along west side of the road cut and fill slope.

Site Name: Access Road (KM 9.5) **Date:** July 2 to September 13, 2011

Photo 5 (July 1, 2011): km 9.5 Looking south - tension cracks & erosion channels down slope of the road. Note: Visible water seepage through sand/gravel.

Photo 6 (September 13, 2011): km 9.5 Looking south - tension cracks & erosion channels down slope of the road. Note: No visible water seepage.

Photo 7 (September 13, 2011): km 9.5 Looking west – portion of 1st silt fence barrier covered by moving sand/gravel. 2nd silt fence still in place at the toe.

Photo 8 (September 13, 2011): km 9.5 Looking south - roadside seeds growing where the ground is moist. Note: 1st silt fence barrier intact at toe.

Site Name: Access Road (KM 11.5 & 19)	**Date:** July 2 to September 13, 2011
	
Photo 9 (September 13, 2011): KM 11.5 Looking south - extension to the culvert and rip rap placed before the culvert.	**Photo 10** (September 13, 2011): KM 11.5 Looking south - packed cut and fill slope of the borrow source access road
	
Photo 11 (August 17, 2011): KM 19 – Looking east - up slope rip-rap placed before the culvert.	**Photo 12** (August 17, 2011): KM 19 Looking west - down slope rip rap and silt fencing installed after the culvert.

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: June 17, 2011	Inspector(s): Jaymie Skidmore
Site Name: Access Road (Sediment and erosion control, Silt Fence repair)	Location/Co-ordinates: Wolverine access road - Km 0 to Km 32
Site Location Description: The Wolverine Mine site access road starts at Km 190 on the Robert Campbell Hwy and ends at the YZC Exploration Camp at Wolverine Lake. The total length of the access road is 32 Km and passes through several different bioclimatic regions. The key water crossings include: Pitch, Putt, Bunker, Chip Bogey, Hawkowl, Go and Campbell Creeks.	
Weather Conditions: Spring conditions, short periods of rainfall. Average daily temperature of 18 ^{o}C.	
Part 2 – Site Assessment	
Activity: - Repairing silt fences located around site and along the access road. - Sediment and erosion control in and around key drainages.	
Site Status: - Silt fences in various locations around site are in need of repair or replacement.	
Assessed Risk: Low	
Photos Attached: Yes (4)	
Samples Taken: No	
Additional Information Attached: No	
Part 3 –Mitigation Requirements	
Mitigation Required: Repair or replace silt fences as needed.	
Mitigation Condition: Good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: During periods of heavy rainfall.	
Monitoring Frequency: bi-weekly throughout the summer months.	
Reporting Requirements: Environmental monitoring reports to be done in the event of a significant change or concern.	

Wolverine Project
Environmental Inspection Form

Site Name: Access Road Silt Fences	**Date:** June 17, 2011
	
Photo 1 (11/06/17) Before (silt fence has fallen down)	**Photo 2 (11/06/17)** After (silt fence has been repaired)
	
Photo 3 (11/06/17) Sediment control at Pitch Creek.	**Photo 4 (11/06/17)** Sediment Control at a large drainage point along the access road.

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: April 28th – May 11th, 2011	Inspector(s): Jennie Gjertsen
Site Name: Access Road Creeks	Location/Co-ordinates: Km 0 - Km 32
Location Description: Key creeks and drainages along access road.	
Weather Conditions: Early spring conditions, some periods of snowfall. Freezing temperatures overnight warming to above 0°C during the day.	
Part 2 – Site Assessment	
Activity: Monitoring of creek flows for background information and determining if mitigation is required during spring months.	
Site Status: Flows in creeks increasing, Go Creek (dry in winter) started to flow May 8th.	
Assessed Risk: Low	
Photos Attached: Yes	
Samples Taken: No	
Additional Information Attached: No	
Part 3 –Mitigation Requirements	
Mitigation Required: None	
Mitigation Condition: N/A	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor Creeks as spring progresses to determine if any mitigation is required.	
Monitoring Frequency: Minimum once a week as runoff continues	
Reporting Requirements: Every two weeks until freshet has subsided. (Late June)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access Road Creeks	**Date:** April 28th – May 11th, 2011
	
11/04/30 Pitch Creek – upstream	**11/04/30** Pitch Creek – downstream
	
11/04/30 Putt Creek – upstream	**11/04/30** Putt Creek – downstream

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access Road Creeks	**Date:** April 28th – May 11th, 2011
	
11/04/30 Bunker Creek – Upstream	**11/04/30** Bunker Creek – Downstream
	
11/04/30 Chip Creek – Upstream	**11/04/30** Piper Lake

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access Road Creeks	**Date:** April 28th – May 11th, 2011
	
11/05/05 Pitch Creek – upstream	**11/05/05** Pitch Creek – down stream
	
11/05/05 Putt Creek – upstream	**11/05/05** Putt Creek – downstream

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access Road Creeks	**Date:** April 28th – May 11th, 2011
	
11/05/08 Bunker Creek – upstream	**11/05/08** Bunker Creek – down stream
	
11/05/08 Hawkowl Creek – upstream	**11/05/08** Hawkowl Creek – downstream

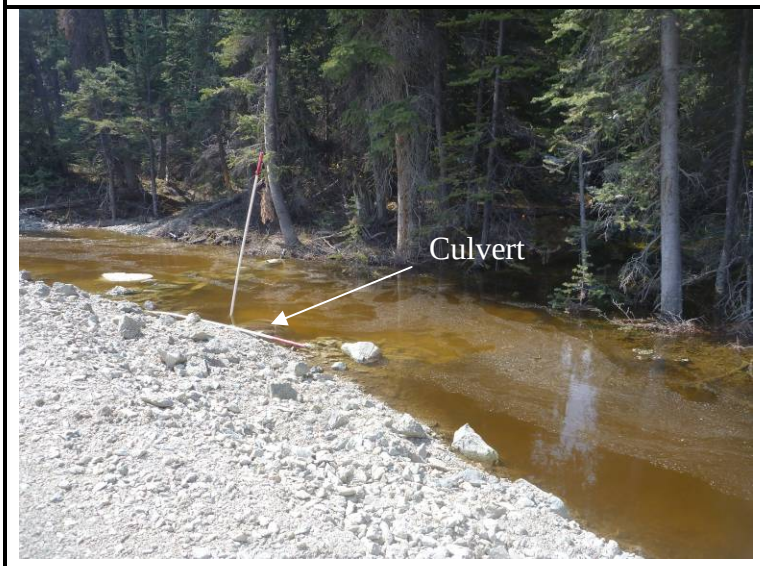
Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: May 27th, 2011	Inspector(s): Jennie Gjertsen
Site Name: Access Road Creeks	Location/Co-ordinates: Km 0 - Km 32
Location Description: Key creeks and drainages along access road.	
Weather Conditions: Sunny and warm in the previous week, significant snow melt around the project.	
Part 2 – Site Assessment	
Activity: Monitoring of creek flows for background information and determining if mitigation is required during spring months.	
Site Status: Flows in creeks continue to increase. Chip Creek not flowing through frozen culvert, but flowing past to another. Flows not being impeded by culvert size at any creek.	
Assessed Risk: Low	
Photos Attached: Yes	
Samples Taken: No	
Additional Information Attached: No	
Part 3 –Mitigation Requirements	
Mitigation Required: None	
Mitigation Condition: N/A	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor Creeks as spring progresses to determine if any mitigation is required.	
Monitoring Frequency: Minimum once a week as runoff continues	
Reporting Requirements: Every two weeks until freshet has subsided. (Late June)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access Road Creeks	**Date:** May 27th, 2011
	
11/05/27 Pitch Creek – upstream	**11/05/27** Pitch Creek – down stream
	
11/05/27 Putt Creek – upstream	**11/05/27** Putt Creek – downstream

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access Road Creeks	**Date:** May 27th, 2011
	
11/05/27 Bunker Creek – Upstream	**11/05/27** Bunker Creek – Downstream
	
11/05/27 Chip Creek – Upstream – water not draining through culvert blocked by ice.	**11/05/27** Chip Creek –Downstream – No evidence of flow through culvert

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Access Road Creeks	**Date:** May 27th, 2011
	
11/05/27 Hawkowl Creek – Upstream	**11/05/27** Hawkowl Creek – Downstream
	
11/05/27 Go Creek – Upstream at airstrip access	**11/05/27** Go Creek –Downstream at airstrip access

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: October 11, 2011	Inspector(s): Margaret Ayles
Site Name: Landfill (incinerator)	Location/Co-ordinates: Km 26.2
Weather Conditions: cloudy and snow-4 °C	
Part 2 – Site Assessment	
Activity: - During a routine inspection at the landfill. There was an Illegal dumping at the incinerator, a barrel was found with only plastic garbage bag covering it (see pictures1 and 2).	
Site Status: The Special Waste Pad is currently out of compliance with our Environmental Act Permit.	
Assessed Risk: Low	
Photos Attached: Yes (2)	
Samples Taken: No	
Additional Information Attached: No	
Part 3 –Mitigation Requirements	
Mitigation Required: Action needs to be taken in order to be in complete compliance with the Environmental Act permit. Barrels at the SWP need to be properly covered.	
Mitigation Condition: Ongoing	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Ongoing monitoring is needed to ensure compliance	
Monitoring Frequency: Monthly	
Reporting Requirements: As needed	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Incinerator at Landfill	**Date:** October 11, 2011
	
Photo 1 (11/10/11): small barrel left at incinerator needs to be moved to SWP.	**Photo 2 (11/10/11):** Oil and grease in the barrel with only a plastic bag covering it.

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: March 31st to April 14th, 2011	Inspector(s): Jennie Gjertsen
Site Name: Industrial Complex (IC)	Location/Co-ordinates: Industrial complex
Site Location Description: The industrial complex at the Wolverine site is situated between Km 27.5 and Km 29 on the access road. The area primarily falls within the Wolverine watershed. Collection ditches are built around the entire complex to contain any surface water runoff that comes in contact with material that could contaminate the water, and directs it to the water treatment sump #2 or pumped directly to tailings where it will be tested and treated if required. IC Ditch #1 is used to collect and divert a source of the headwaters of Wolverine creek and divert it around the IC and deposit it into its natural path. The IC is situated in a mostly pre disturbed area; tree removal, grubbing, organic and overburden removal were completed to prepare site for infrastructure.	
Weather Conditions: Early spring conditions, some periods of snowfall. Freezing temperatures overnight warming to above 0°C during the day.	
Part 2 – Site Assessment	
Activity: - Truck shop excavation started April 1st. - Monitoring and clearing of Industrial complex drainage ditches (particularly 3 and 4). - Internal ditching and water management in work areas (mill pad, crusher pad etc.) - Monitoring and mitigating areas of pooling and erosion. - Piping work for underground supply and discharge at sump #2	
Site Status: - Water flowing better in ditches at end of period - Most of localized snow melt on the IC completed runoff still to come from slopes around IC. - Excavation of Truck Shop ongoing - Water management still required during runoff period - Slopes of Ditch 4 showing some new signs of sloughing/cracking, some pre-existing.	
Assessed Risk: Low	
Photos Attached: Yes	
Samples Taken: No	
Additional Information Attached: No	
Part 3 –Mitigation Requirements	
Mitigation Required: Continue reducing surface water pooling with ditching and diverting flows. Re-seed banks of ditches 3 and 4 as season progresses.	
Mitigation Condition: Good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Continue to monitor site for drainage and inspect for new issues as snow melts.	
Monitoring Frequency: Every day as spring runoff continues, and during periods of heavy rainfall.	
Reporting Requirements: As conditions warrant.	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Industrial Complex	**Date:** March 31st to April 14th, 2011
	
11/04/01 Water flowing in daytime from Ditch 3 into Sump #2	**11/04/01** Water flowing in daytime from Ditch 4 into Sump #2
	
11/04/03 Truck Shop excavation	**11/04/09** Truck Shop excavation

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Industrial Complex	**Date:** March 31st to April 14th, 2011
	
11/04/05 Ditch # 4 (facing NW) high water level, low flowing	**11/04/05** Ditch # 4 (facing SE) channel opened up in snow to encourage flow down ditch
	
11/04/06 Ditch # 4 (facing NW) full of snow, limiting flow	**11/04/06** Ditch # 4 (facing SE) full of snow, limiting flow

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Industrial Complex	**Date:** March 31st to April 14th, 2011
	
11/04/07 Ditch # 4 (facing NW) evidence of very slight overflow overnight.	**11/04/08** End of Ditch # 4 (facing NW) full of snow, limiting flow
	
11/04/08 Ditch # 4 (facing SE) bank showing signs of recent sloughing, but not overflow from ditch	**11/04/08** Ditch # 4 recent bank sloughing, potential saturation in lock trench

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Industrial Complex	**Date:** March 31st to April 14th, 2011
	
11/04/08 Ditch # 4 (facing NW) evidence of cracking. Some pre-existing from last year.	**11/04/08** Ditch # 4 (facing NW) evidence of cracking. Some pre-existing from last year.
	
11/04/08 Ditch # 4 (facing NW) evidence of cracking and sloughing. Some pre-existing from last year.	**11/04/08** Ditch # 4 bank sloughing, pre-existing.

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: April 23rd and 24th, 2011	Inspector(s): Jaymie Skidmore and Robin McCall
Site Name: Industrial Complex (IC)	Location/Co-ordinates: Industrial complex
Site Location Description: The industrial complex at the Wolverine site is situated between Km 27.5 and Km 29 on the access road. The area primarily falls within the Wolverine watershed. Collection ditches are built around the entire complex to contain any surface water runoff that comes in contact with material that could contaminate the water, and directs it to the water treatment sump #2 or pumped directly to tailings where it will be tested and treated if required. IC Ditch #1 is used to collect and divert a source of the headwaters of Wolverine creek and divert it around the IC and deposit it into its natural path. The IC is situated in a mostly pre disturbed area; tree removal, grubbing, organic and overburden removal was completed to prepare site for infrastructure.	
Weather Conditions: Early spring conditions. Some snow fall. Temperatures rising daily.	
Part 2 – Site Assessment	
Activity: - Spring runoff was pooling and eroding the west bank of powerhouse pad - Installed a temporary drainage ditch on the east bank of the powerhouse pad to allow the water that had pooled on the pad to drain.	
Site Status: - Drainage system mitigated in and around the powerhouse pad.	
Assessed Risk: Low	
Photos Attached: Yes	
Samples Taken: No	
Additional Information Attached: No	
Part 3 –Mitigation Requirements	
Mitigation Required: Install permanent ditching in area to direct water flow to drainage ditches.	
Mitigation Condition: To be completed	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor the water flow and drainage issues on the pad until spring runoff subsides.	
Monitoring Frequency: Daily during runoff and in periods of heavy rain.	
Reporting Requirements: As conditions warrant.	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Industrial Complex	**Date:** April 23rd and 24th, 2011
	
11/04/23 Spring melt is flowing down from the explosive magazine road onto powerhouse pad.	**11/04/23** Water from spring melt is pooling.
	
11/04/23 Water is flowing towards west bank of powerhouse pad.	**11/04/23** Water has eroded some of the west bank of the powerhouse pad.

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Industrial Complex	**Date:** April 23rd and 24th, 2011
	
11/04/24 A section of the berm along the southeast bank of the powerhouse pad was removed to temporary allow water to drain off the pad.	**11/04/24** Drainage ditch installed along the southeast bank.
	
11/04/24 Installed a swale to help direct the runoff towards the temporary drainage ditch.	**11/04/24** Temporary drainage ditch.

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: February 22, 2011	Inspector(s): Jaymie Skidmore
Site Name: Special Waste Pad	Location/Co-ordinates: Km 29
Weather Conditions: High winds with medium snow fall. Average daily temperature of -20°C.	

Part 2 – Site Assessment

Activity:

- Waste oil from the gen-set pad and Procon shop are currently being stored in 200L barrels at the SWP.
- A pallet of pails containing various used materials such as Potassium Nitrate has been stored there (Photo 3 and 4).
- Four 15L jugs of used Dragersorb 400 have been unknowingly dumped in the area (Photo 5 and 6).
- Three class 9 bins containing used aerosol cans are currently stored there.
- Cannot do an inventory at this time due to the snow cover and position of the barrels.

Site Status:

The Special Waste Pad is currently out of compliance with our Environmental Act Permit in the fallowing ways

- Barrels containing waste oil and/or diesel are not covered with tarps (Photo 1).
- Barrels containing waste oil and/or diesel are not on palettes (Photo 2).
- Containers containing special wastes are not properly segregated from each other (Photo 3).

Assessed Risk: Medium

Photos Attached: Yes

Samples Taken: No

Additional Information Attached: No

Part 3 –Mitigation Requirements

Mitigation Required: Action needs to be taken in order to be in complete compliance with the Environmental Act permit. Barrels need to be covered with tarps and placed on palettes. Waste needs to be organised and separated.

Mitigation Condition: Ongoing

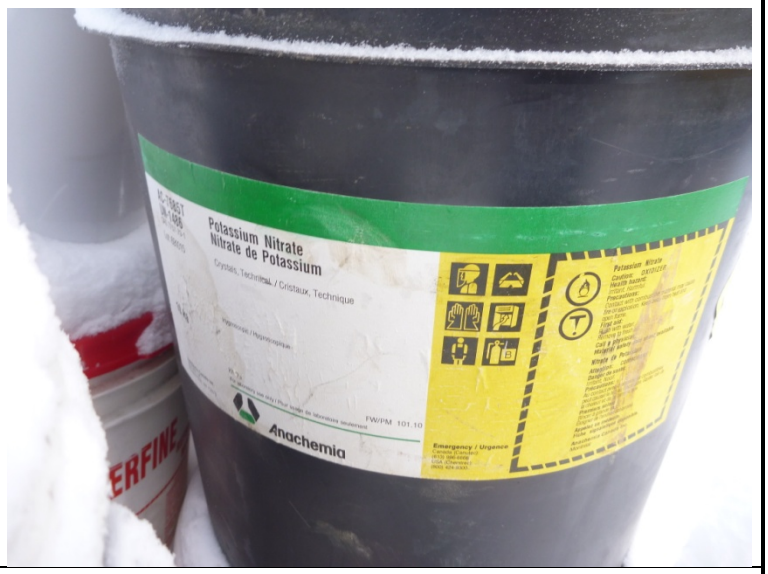
Part 4 –Monitoring Requirements

Follow-up Monitoring: Ongoing monitoring is needed to ensure compliance

Monitoring Frequency: Monthly

Reporting Requirements: As needed

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Special Waste Pad	**Date:** February 22, 2011
	
Photo 1 (11/02/22): Barrels not covered with tarps.	**Photo 2 (11/02/22): Barrels not on pallets.**
	
Photo 3 (11/02/22): Various unknown used materials placed in close proximity to hydrocarbons.	**Photo 4 (11/02/22): Example of a pail on the pallet with various unknown used material.**

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Special Waste Pad	**Date:** February 22, 2011
	
Photo 5 (11/02/22): Four 15L jugs of used Dragersorb 400 have been unknowingly dumped in the area.	**Photo 6 (11/02/22): Example of one of the jugs of Dragersorb dumped in the area.**

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: November 01, 2011	Inspector(s): Margaret Ayles
Site Name: Special Waste Pad	Location/Co-ordinates: Km 26.2
Weather Conditions: Snowing -5°C	

Part 2 – Site Assessment
Activity: - During a routine inspection, barrels are exposed to the elements (Photo 1). - The barrels are covered with ply board on top of barrels (photo 2).
Site Status: The Special Waste Pad is currently out of compliance with our Environmental Act Permit in the fallowing ways - Barrels not covered (Photo 1). - Barrels are now fixed (Photo 2).
Assessed Risk: Medium
Photos Attached: Yes
Samples Taken: No
Additional Information Attached: No

Part 3 –Mitigation Requirements
Mitigation Required: Action needs to be taken in order to be in complete compliance with the Environmental Act permit. Barrels need to be covered.
Mitigation Condition: Ongoing

Part 4 –Monitoring Requirements
Follow-up Monitoring: Ongoing monitoring is needed to ensure compliance
Monitoring Frequency: Monthly
Reporting Requirements: As needed

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Special Waste Pad	**Date: November 01 2011**
	
Photo 1(11/10/28) Barrels not covered, not in compliance with environmental act permit.	Photo 2 (11/10/30) Barrels are now covered and in compliance with the act permit.

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: December 7, 2011	Inspector(s): Margaret Ayles
Site Name: Special Waste Pad	Location/Co-ordinates: Km 26.2
Weather Conditions: Clear -10	

Part 2 – Site Assessment
Activity: - During a routine inspection, barrels are exposed to the elements (Photo 1). - The barrels are covered with ply board on top of barrels (photo 2).
Site Status: The Special Waste Pad is currently out of compliance with our Environmental Act Permit in the fallowing ways - Barrels not covered (Photo 1). - Barrels are now fixed (Photo 2).
Assessed Risk: Medium
Photos Attached: Yes
Samples Taken: No
Additional Information Attached: No

Part 3 –Mitigation Requirements
Mitigation Required: Action needs to be taken in order to be in complete compliance with the Environmental Act permit. Barrels need to be covered.
Mitigation Condition: Ongoing

Part 4 –Monitoring Requirements
Follow-up Monitoring: Ongoing monitoring is needed to ensure compliance
Monitoring Frequency: Monthly
Reporting Requirements: As needed

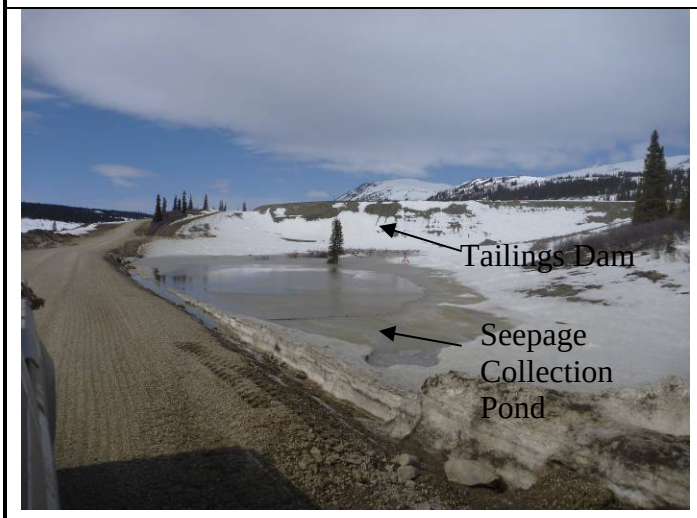
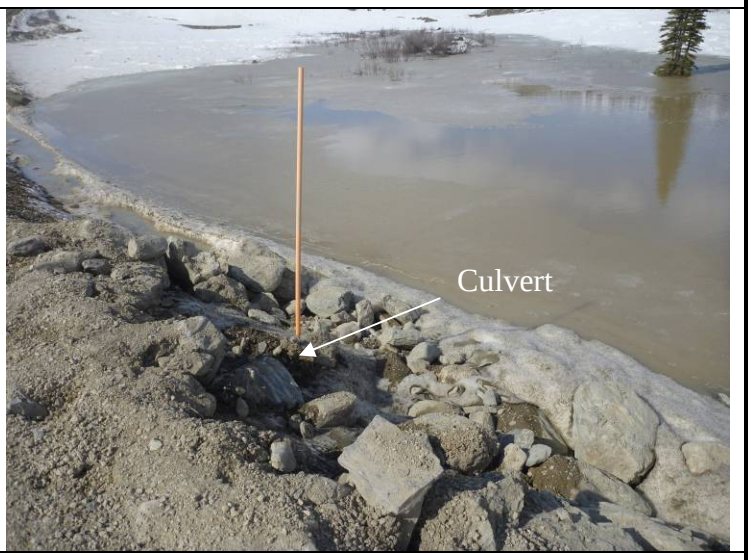
Wolverine Project
Environmental Inspection Form – Photos

Site Name: Special Waste Pad	**Date: December 7, 2011**
	
Photo 1(11/12/7) Barrels not covered, not in compliance with environmental act permit.	Photo 2 (11/12/7) Barrels are now covered and in compliance with the act permit.

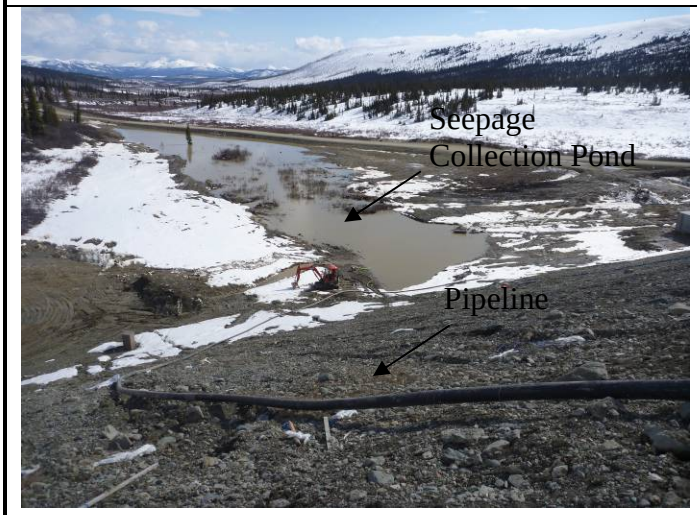
Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: April 28th – May 11th, 2011	Inspector(s): Jennie Gjertsen
Site Name: Tailings Facility	Location/Co-ordinates: Km 24.2 on the access road
Site Location Description: The tailings storage facility consists of a lined basin, the main dam, a seepage collection dam and pond, a spillway, diversion ditches, reclaim pump barge, underdrains and pipelines. The reclaim and tailings pipelines extend from the tailings facility to the industrial complex and are aligned along the access road between the two areas. The tailings facility receives all of the waste water and tailings produced from milling activities at the Wolverine Mine. Reclaim water is sent back to the mill for process water.	
Weather Conditions: Early spring conditions, some periods of snowfall. Freezing temperatures overnight warming to above 0°C during the daytime.	
Part 2 – Site Assessment	
Activities: - Sampling of seepage collection water - Installation of permanent seepage return pumping system - Pumping of water collected in the seepage collection pond into the tailings storage facility - Daily monitoring for wildlife in and around facility - Migratory bird surveys and deterrence of waterfowl - Monitoring of diversion ditches and underdrain flow rates	
Site Status: - Permanent manual pumping system installed for seepage collection pond	
Assessed Risk: Low	
Photos Attached: Yes	
Samples Taken: No	
Additional Information Attached: None	
Part 3 –Mitigation Requirements	
Mitigation Required: Drainage into seepage collection area to be improved to minimize runoff that requires pumping back to tailings.	
Mitigation Condition: Good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Routine monitoring as described in *Tailings Operation, Maintenance and Surveillance Manual*	
Monitoring Frequency: daily for wildlife	
Reporting Requirements: Reporting as required by TSF OMS manual; Environmental monitoring as major changes occur.	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Tailings Storage Facility	**Date:** April 28th – May 11th, 2011
	
11/04/30 Water collecting in seepage collection pond.	**11/04/30** Showing water level in respect to overflow culverts
	
11/05/02 Temporary pumps (trash pumps) installed today to manage water collection. Pumping back into Tailings storage facility.	**11/05/09** Generator in place for permanent pumping power. Can see a noticeable water drop in pond volume since temporary measures put in place.

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Tailings Storage Facility	**Date:** April 28th – May 11th, 2011
	
10/05/09 Seepage collection pond permanent piping installation.	**10/05/09** Seepage collection pond piping discharge point into tailings storage facility.

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: September 1st – 22nd, 2011	Inspector(s): Margaret Ayles / Robin McCall
Site Name: New Waste Rock Pad (WRP) and Organic Stockpile	Location/Co-ordinates: KM25 – 25.5 (Arctic Camp)
Site Location Description: The area to be excavated in preparation of the New WRP can be characterized as a low lying bog that receives and retains a large amount of water from the surrounding area. The area is thus very moist and consists of a thick organics layer. This area lies just north of the Old Arctic Camp Lay down area that is much more compact and stable in nature.	
Weather Conditions: Precipitation low, temperature ranged from 0 – 10 ^{o}C	
Part 2 – Site Assessment	
Activity: - Excavation of a diversion ditch (Photo 1) to divert incoming water to Go Creek Drainage Basin via pre-existing culverts that run beneath the Arctic Camp Lay down area (Photo 2). - Initial stages of excavation for the preparation of the New WRP (Photo 3). - Removal of organics layer, which is stored across the Access Road at the Arctic Camp Lay down area (Photo 4). - Due to the thickness of the organics layer (Photo 5), and underlying clay layer (that is also moist and unstable) (Photo 6), the excavation had to go deeper than anticipated in order to reach a hard, stable surface that can adequately support the New WRP. Temporary ditches/channels had to be made to divert all the seepage water from the organics/clay layer (Photo 7). - During rainy periods, stripping of future borrow source area (for ultimate tailings dam lift) to make room for soil from WRP excavation (Photo 8)	
Assessed Risk: Med	
Photos Attached: Yes (8)	
Samples Taken: No	
Additional Information Attached: none	
Part 3 –Mitigation Requirements	
Mitigation Required: Silt fence installed around the organics to prevent sedimentation runoff.	
Mitigation Condition: good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor for any runoff potential from organic storage and other potential contaminants.	
Monitoring Frequency: Daily, during rain events.	
Reporting Requirements: As conditions warrant (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: *Ops Waste Rock Pad*	***Date*** *September 1st – 22nd, 2011*
	
Photo 1 (11/09/04) Result of diversion ditch excavation and removal of organics.	**Photo 2 (11/09/04)** Water diverted under road and into Go Creek drainage basin – evidence of sediment load.
	
Photo 3 (11/09/04) Initial stages of transporting organics to new Organic Stockpile.	**Photo 4 (11/09/05)** Initial stages of excavation for the preparation of the New WRP.

Wolverine Project
Environmental Inspection Form – Photos

Site Name: *Ops Waste Rock Pad*	***Date*** *September 1st – 22nd, 2011*
	
Photo 5 (11/09/19) Thick Organics layer that is seeping out large amounts of water, despite upstream diversion ditch.	**Photo 6 (11/09/19)** Ditching was required to divert water while excavation was carried out.
	
Photo 7 (11/09/19) Showing construction of diversion ditch within the New WRP area.	**Photo 8 (11/09/22)** Stripping of organics at future borrow site (for ultimate dam lift) to make room for WRP backfill.

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: September 23rd – October 1st , 2011	Inspector(s): Jaymie Skidmore
Site Name: New Waste Rock Pad (WRP) and Organic Stockpile	Location/Co-ordinates: KM25 – 25.5 (Arctic Camp)
Site Location Description: The area to be excavated in preparation of the New WRP can be characterized as a low lying bog that receives and retains a large amount of water from the surrounding area. The area is thus very moist and consists of a thick organics layer. This area lies just north of the Old Arctic Camp Lay down area that is much more compact and stable in nature.	
Weather Conditions: Precipitation low, snow starting to fall, temperature ranged from 0 –5 ^{o}C	
Part 2 – Site Assessment	
Activity: - Initial stages of excavation for the preparation of the New WRP - Removal of organics layer, which is stored across the Access Road at the Arctic Camp Lay down area (photo 1) - Stripping area at south end of ay down to store overburden material from WRP excavation (photo 2) -Organics are now being stored at km 25 (photo 3) -Evidence of sediment load/runoff from excavated material at south end of pad. (Photo 4)	
Assessed Risk: Med	
Photos Attached: Yes (4)	
Samples Taken: None	
Additional Information Attached: none	
Part 3 –Mitigation Requirements	
Mitigation Required: Silt fence around the organics to prevent sedimentation runoff.	
Mitigation Condition: good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor for any runoff potential from organic storage and other potential contaminants.	
Monitoring Frequency: Daily, during rain events.	
Reporting Requirements: As conditions warrant (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: *Ops Waste Rock Pad*	***Date*** *September 23rd, 2011*
	
Photo 1 (11/09/23) Organics located across from WRP	**Photo 2 (11/09/23)** Stripping of future borrow source
	
Photo 3 (11/09/23) Organic stock pile located at km25	**Photo 4 (11/09/23)** Evidence of sediment load/runoff at South end of pad.

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: September 26th , 2011	Inspector(s): Jaymie Skidmore
Site Name: New Waste Rock Pad (WRP) and Organic Stockpile	Location/Co-ordinates: KM25 – 25.5 (Arctic Camp)
Site Location Description: The area to be excavated in preparation of the New WRP can be characterized as a low lying bog that receives and retains a large amount of water from the surrounding area. The area is thus very moist and consists of a thick organics layer. This area lies just north of the Old Arctic Camp Lay down area that is much more compact and stable in nature.	
Weather Conditions: Snow fall increasing, light layer of snow covering, temperature ranged from 0 –3 ^{o}C	
Part 2 – Site Assessment	
Activity: - Initial stages of excavation for the preparation of the New WRP - Removal of Organics is complete -Excavating overburden (picture 1 and 2) -Storing Overburden at east end of ACL lay down for future use in the tailings dam lift. (picture 3) - Stripping of future borrow source area (for ultimate tailings dam lift) to make room for soil from WRP excavation (picture 4)	
Site Description: KM 25 - 25.5 at the Arctic Camp area	
Assessed Risk: Med	
Photos Attached: Yes (4)	
Samples Taken: None	
Additional Information Attached: none	
Part 3 –Mitigation Requirements	
Mitigation Required: Silt fence around the organics to prevent sedimentation runoff. Silt fencing and rip rap needed where water from east end is flowing from WRP to ditch A.	
Mitigation Condition: good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor for any runoff potential from organic storage and other potential contaminants.	
Monitoring Frequency: Daily, during rain events.	
Reporting Requirements: As conditions warrant (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: *Ops Waste Rock Pad*	***Date*** *September 26th , 2011*
	
Photo 1 (11/09/26) Excavating overburden material (south)	**Photo 2 (11/09/26)** Excavating overburden material (north)
	
Photo 3 (11/09/26) Overburden storage (south)	**Photo 4 (11/09/26)** Stripping back organics to make room to store overburden from the OpsWRP for the tailings dam lift (North)

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: September 30th , 2011	Inspector(s): Jaymie Skidmore
Site Name: New Waste Rock Pad (WRP) and Organic Stockpile	Location/Co-ordinates: KM25 – 25.5 (Arctic Camp)
Site Location Description: The area to be excavated in preparation of the New WRP can be characterized as a low lying bog that receives and retains a large amount of water from the surrounding area. The area is thus very moist and consists of a thick organics layer. This area lies just north of the Old Arctic Camp Lay down area that is much more compact and stable in nature.	
Weather Conditions: Snow fall increasing, light layer of snow covering, temperature ranged from -5 – 3 ^{o}C	
Part 2 – Site Assessment	
Activity: - Initial stages of excavation for the preparation of the New WRP ~28000 square meters of liner will be needed. - Removal of Organics is complete and stored at km 25 -Excavating overburden (picture 1 and 2) -Storing Overburden at east end of ACL lay down for future use in the tailings dam lift. (picture 3) -A French drain (diversion ditch) will run from the west end of the WRP all the way under the liner and geo-tech and then tie into the Diversion Ditch A at the east end. Approx 2 % grade on the drain. This has to be installed. No pics available	
Site Description: KM 25 - 25.5 at the Arctic Camp area	
Assessed Risk: Med	
Photos Attached: Yes	
Samples Taken: None	
Additional Information Attached: none	
Part 3 –Mitigation Requirements	
Mitigation Required: Silt fence around the organics to prevent sedimentation runoff. Silt fencing and rip rap needed where water from east end is flowing from WRP to ditch A.	
Mitigation Condition: good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor for any runoff potential from organic storage and other potential contaminants.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrant (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: *Ops Waste Rock Pad*	***Date*** *September 30th , 2011*
	
Photo 1 (11/09/) Excavating overburden material (East)	**Photo 2 (11/09/)** Excavating overburden material (East)

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: October 2nd – October 14th ,2011	Inspector(s): Jaymie Skidmore/Margaret Ayles
Site Name: New Waste Rock Pad (WRP) and Organic Stockpile	Location/Co-ordinates: KM25 – 25.5 (Arctic Camp)
Site Location Description: The area to be excavated in preparation of the New WRP can be characterized as a low lying bog that receives and retains a large amount of water from the surrounding area. The area is thus very moist and consists of a thick organics layer. This area lies just north of the Old Arctic Camp Lay down area that is much more compact and stable in nature.	
Weather Conditions: Snow fall increasing, light layer of snow covering, temperature ranged from -5 – 3 ^{o}C	
Part 2 – Site Assessment	
Activity: - Removal of Organics is ongoing - Excavating overburden is ongoing (stock piled for ultimate dam lift at south end of ACL lay down) - A French drain (diversion ditch) will run from the west end of the WRP all the way under the liner and geo-tech and then tie into the Diversion Ditch A at the east end. Approx 2 % grade on the drain. This has yet to be installed. No pics available - French drain installation has begun. Geotech, overburden and coble are being used. (Photo 1 and 2) - Continuing to strip material back in order to make room for overburden stock pile. (Photo 3 and 4) - There has been a decrease of water flow throughout the diversion ditch due to freezing temperatures. - Aprox. 28000 square meters of liner will be needed.	
Assessed Risk: Med	
Photos Attached: Yes (4)	
Samples Taken: None	
Additional Information Attached: none	
Part 3 –Mitigation Requirements	
Mitigation Required: Diversion of water where needed or as springs surface.	
Mitigation Condition: good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor for any runoff potential from organic storage and other potential contaminants.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrant (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: *Ops Waste Rock Pad*	***Date*** October 2nd ,2011
	
Photo 1 **(11/10/02) Franch Drain insalation started at north end of pad.**	**Photo 2** **(11/10/02) Geotech, coble and overburden being used for french drain instalation.**
	
Photo 3 **(11/10/02) Material has been stripped to make room for overburden stockpile at south end of ACL lay down.**	**Photo 4** **(11/10/02) The overburden stock pile has increased in size as construction is ongoing. (stock piled for ultimate dam lift)**

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: October 4th ,2011	Inspector(s): Margaret Ayles
Site Name: New Waste Rock Pad (WRP)	Location/Co-ordinates: KM25 – 25.3 (Arctic Camp)
Site Location Description: The area to be excavated in preparation of the New WRP can be characterized as a low lying bog that receives and retains a large amount of water from the surrounding area. The area is thus very moist and consists of thick organics layer. This area lies just north of the Old Arctic Camp Lay down area that is much more compact and stable in nature.	
Weather Conditions: Snow fall increasing, light layer of snow covering, temperature ranged from -5 to - 3 ^{o}C	
Part 2 – Site Assessment	
Activity: - Initial stages of excavation for the preparation of the New WRP ~28000 square meters of liner will be needed. - Removal of Organics is ongoing and stored at km 25.3 -Excavating overburden is ongoing -Storing Overburden at east end of ACL lay down for future use in the tailings dam lift. -A French drain (diversion ditch) will run from the northwest end of the WRP all the way under the liner and geo-tech and then tie into the Diversion Ditch A at the east end. Approx 2 % grade on the drain. (see pictures 3 and 4) -Geo text membrane has been placed over the layer of clay at the base of the pad and has had overburden and coble placed over it in a layering affect. (French Drain installation) (picture 1 and 2) -Continuing to strip material back in order to make room for overburden stock pile -There has been a decrease of water flow throughout the pad due to freezing temperatures.	
Site Description: KM 25 - 25.5 at the Arctic Camp area	
Assessed Risk: Low	
Photos Attached: Yes (4)	
Samples Taken: None	
Additional Information Attached: none	
Part 3 –Mitigation Requirements	
Mitigation Required: Silt fence around the organics to prevent sedimentation runoff. Silt fencing and rip rap needed where water from east end is flowing from WRP to ditch A.	
Mitigation Condition: good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor for any runoff potential from organic storage and other potential contaminants.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrant (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: *Ops Waste Rock Pad*	***Date*** October 4 ,2011
	
Photo 1 **(11/10/02) French Drain instalation has begun at the West end of the pad. Currently being covered with overburden materiel.**	**Photo 2** **(11/10/04)) The French Drain is now located under this thick layer of overburnden along the west end of the pad.**
	
Photo 3 **(11/10/04) This is the course the French Drain will follow that will then tie into Diversion Ditch A from the West to the East end.**	**Photo 4** **(11/10/04)) Begining of French Drain shown here with finger drains leading into it.**

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: October 8 ,2011	Inspector(s): Margaret Ayles
Site Name: New Waste Rock Pad (WRP)	Location/Co-ordinates: KM25 – 25.3 (Arctic Camp)
Site Location Description: The area to be excavated in preparation of the New WRP can be characterized as a low lying bog that receives and retains a large amount of water from the surrounding area. The area is thus very moist and consists of thick organics layer. This area lies just north of the Old Arctic Camp Lay down area that is much more compact and stable in nature.	
Weather Conditions: Snow fall increasing, light layer of snow covering, temperature ranged from -5 to - 3 ^{o}C	
Part 2 – Site Assessment	
Activity: - Initial stages of excavation for the preparation of the New WRP ~28000 square meters of liner will be needed. - Removal of Organics is ongoing and stored at km 25.3 -Excavating overburden is ongoing -Storing Overburden at east end of ACL lay down for future use in the tailings dam lift. -A French drain (diversion ditch) will run from the northwest end of the WRP all the way under the liner and geo-tech and then tie into the Diversion Ditch A at the east end. Approx 2 % grade on the drain. (see pictures1 and 2) -Geo text membrane has been placed over the layer of clay at the base of the pad and has had overburden and coble placed over it in a layering affect. (French Drain installation) (picture 3 and 4) -Continuing to strip material back in order to make room for overburden stock pile -There has been a decrease of water flow throughout the pad due to freezing temperatures.	
Site Description: KM 25 - 25.5 at the Arctic Camp area	
Assessed Risk: Low	
Photos Attached: Yes (4)	
Samples Taken: None	
Additional Information Attached: none	
Part 3 –Mitigation Requirements	
Mitigation Required: Silt fence around the organics to prevent sedimentation runoff. Silt fencing and rip rap needed where water from east end is flowing from WRP to ditch A.	
Mitigation Condition: good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor for any runoff potential from organic storage and other potential contaminants.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrant (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: *Ops Waste Rock Pad*	***Date*** October 8 ,2011
	
Photo 1 (11/10/07) Geo tech layof the french drain. The layer of geoteck is going west to east side direction.	**Photo 2 (11/10/07) West side of the french drain is still been added on.**
	
Photo 3 (11/10/07) Second layer of geo tech on top of the finger drains.	**Photo 4 (11/10/07) Started to fill with cobble, then geotech will be folded.**

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: October 9 ,2011	Inspector(s): Margaret Ayles
Site Name: New Waste Rock Pad (WRP)	Location/Co-ordinates: KM25 – 25.3 (Arctic Camp)
Site Location Description: The area to be excavated in preparation of the New WRP can be characterized as a low lying bog that receives and retains a large amount of water from the surrounding area. The area is thus very moist and consists of thick organics layer. This area lies just north of the Old Arctic Camp Lay down area that is much more compact and stable in nature.	
Weather Conditions: Snow fall increasing, light layer of snow covering, temperature ranged from -5 to - 3 ^{o}C	
Part 2 – Site Assessment	
Activity: - Initial stages of excavation for the preparation of the New WRP ~28000 square meters of liner will be needed. - Removal of Organics is ongoing and stored at km 25.3 -Excavating overburden is ongoing -Storing Overburden at east end of ACL lay down for future use in the tailings dam lift. -A French drain (diversion ditch) will run from the northwest end of the WRP all the way under the liner and geo-tech and then tie into the Diversion Ditch A at the east end. Approx 2 % grade on the drain -Geo text membrane has been placed over the layer of clay at the base of the pad and has had overburden and coble placed over it in a layering affect. (French Drain installation) (see pictures 1 and 2) -Continuing to strip material back in order to make room for overburden stock pile -There has been a decrease of water flow throughout the pad due to freezing temperatures. -French ditch on the east side of WRP that ties into Ditch A is under construction, water is pooling up around old pipe. (See pictures 3 and 4)	
Site Description: KM 25 - 25.5 at the Arctic Camp area	
Assessed Risk: Low	
Photos Attached: Yes (4)	
Samples Taken: None	
Additional Information Attached: none	
Part 3 –Mitigation Requirements	
Mitigation Required: Silt fence around the organics to prevent sedimentation runoff. Silt fencing and rip rap needed where water from east end is flowing from WRP to ditch A.	
Mitigation Condition: good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor for any runoff potential from organic storage and other potential contaminants.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrant (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: *Ops Waste Rock Pad*	***Date*** October 9 ,2011
	
Photo 1 (11/10/08) The geotech is folded and ready for the layer of overburden and second layer of Geo Tech.	**Photo 2 (11/10/08) The Geo Tech is folded but not quite finish as this nears the east end of the WRP.**
	
Photo 3 (11/10/08) water pooling on the east end of WRP.	**Photo 4 (11/10/08) old pipe was dug out water not plugged anymore.**

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: October 11 ,2011	Inspector(s): Margaret Ayles
Site Name: New Waste Rock Pad (WRP)	Location/Co-ordinates: KM25 – 25.3 (Arctic Camp)
Site Location Description: The area to be excavated in preparation of the New WRP can be characterized as a low lying bog that receives and retains a large amount of water from the surrounding area. The area is thus very moist and consists of thick organics layer. This area lies just north of the Old Arctic Camp Lay down area that is much more compact and stable in nature.	
Weather Conditions: Snow fall increasing, light layer of snow covering, temperature ranged from -5 to - 3 ^{o}C	
Part 2 – Site Assessment	
Activity: - Initial stages of excavation for the preparation of the New WRP ~28000 square meters of liner will be needed. - Removal of Organics is ongoing and stored at km 25.3 -Excavating overburden is ongoing -Storing Overburden at east end of ACL lay down for future use in the tailings dam lift. -A French drain (diversion ditch) will run from the northwest end of the WRP all the way under the liner and geo-tech and then tie into the Diversion Ditch A at the east end. Approx 2 % grade on the drain -Geo text membrane has been placed over the layer of clay at the base of the pad and has had overburden and coble placed over it in a layering affect. (French Drain installation) (See picture 4). -Continuing to strip material back in order to make room for overburden stock pile -There has been a decrease of water flow throughout the pad due to freezing temperatures. -The waste rock pad is starting to get levelled out (see pictures 1 to 3).	
Site Description: KM 25 - 25.5 at the Arctic Camp area	
Assessed Risk: Low	
Photos Attached: Yes (4)	
Samples Taken: None	
Additional Information Attached: none	
Part 3 –Mitigation Requirements	
Mitigation Required: Silt fence around the organics to prevent sedimentation runoff. Silt fencing and rip rap needed where water from east end is flowing from WRP to ditch A.	
Mitigation Condition: good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor for any runoff potential from organic storage and other potential contaminants.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrant (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: *Ops Waste Rock Pad*	***Date*** October 11 ,2011
	
Photo 1 (11/10/11) looking to the east, they are now leveling out the overburden.	**Photo 2 (11/10/11)Started tocover the French ditch and leveling out the overburdon.**
	
Photo 3 (11/10/11) the west side of the waste rock pad, part of the French ditch has not been filled	**Photo 4 (11/10/11) north side they are starting to lay additional Geo tech along the base of the mountain.**

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: October 15th –October 18th 2011	Inspector(s): Jaymie Skidmore
Site Name: Operations Waste Rock Pad (Ops WRP)	Location/Co-ordinates: KM25 – 25.3
Site Location Description: The area to be excavated in preparation of the New WRP can be characterized as a low lying bog that receives and retains a large amount of water from the surrounding area. The area is thus very moist and consists of thick organics layer. This area lies just north of the Old Arctic Camp Lay down area that is much more compact and stable in nature.	
Weather Conditions: Snow covered, temperature ranges from -15 to 0 ^{o}C	
Part 2 – Site Assessment	
Activity: -As natural springs continue to surface more and more drains are being installed to divert the water from the pad. -French Drain (diversion ditch) installation is ongoing (Photo 1) -Finger drains to divert water into the French Drain are being installed. (Photo 1) -Levelling Pad has begun (Photo 2) -Installing a berm around the perimeter. (Photo 3)	
All organic material is excavated and stored. Excavation of overburden material is ongoing. A base layer of geotech and a 30mm liner will be installed over the surface of the pad. A .5 meter of material will be placed over the liner when it is installed for protection.	
Assessed Risk: Low	
Photos Attached: Yes (4)	
Samples Taken: None	
Additional Information Attached: See Underhill drawings of French Drain and Berm.	
Part 3 –Mitigation Requirements	
Mitigation Required: Diversion of water where needed or when spring surfaces.	
Mitigation Condition: good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor for any runoff potential from organic storage and other potential contaminants.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrant (i.e. major changes)	

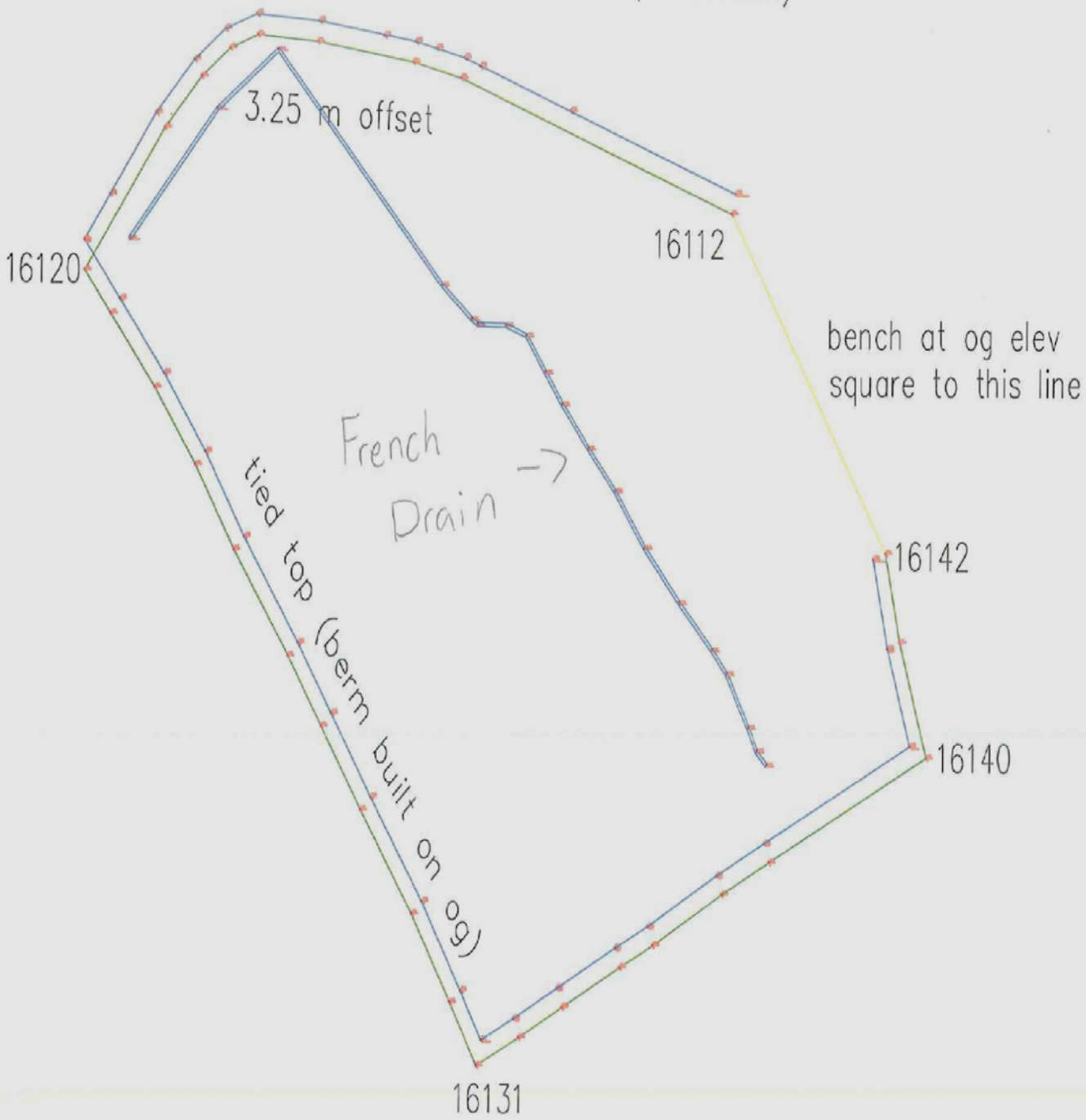
Wolverine Project
Environmental Inspection Form – Photos

Site Name: *Ops Waste Rock Pad*	***Date*** October 15th, 2011
	
Photo 1 (11/10/15) French drain and finger drains being installed to divert water.	**Photo 2 (11/10/15) Pad being leveled out in preperation for liner.**
	
Photo 3 (11/10/15) D8 installing berm around the perimater of pad.	**Photo 4 (11/10/15) Completeion of drainage through out the pad is ongoing in preperation to complete leveling and installation of liner.**

the 3.25 m offset is cl for a 2.5m wide berm with 2:1 slopes on each side

1330.6 is the top of berm elevation

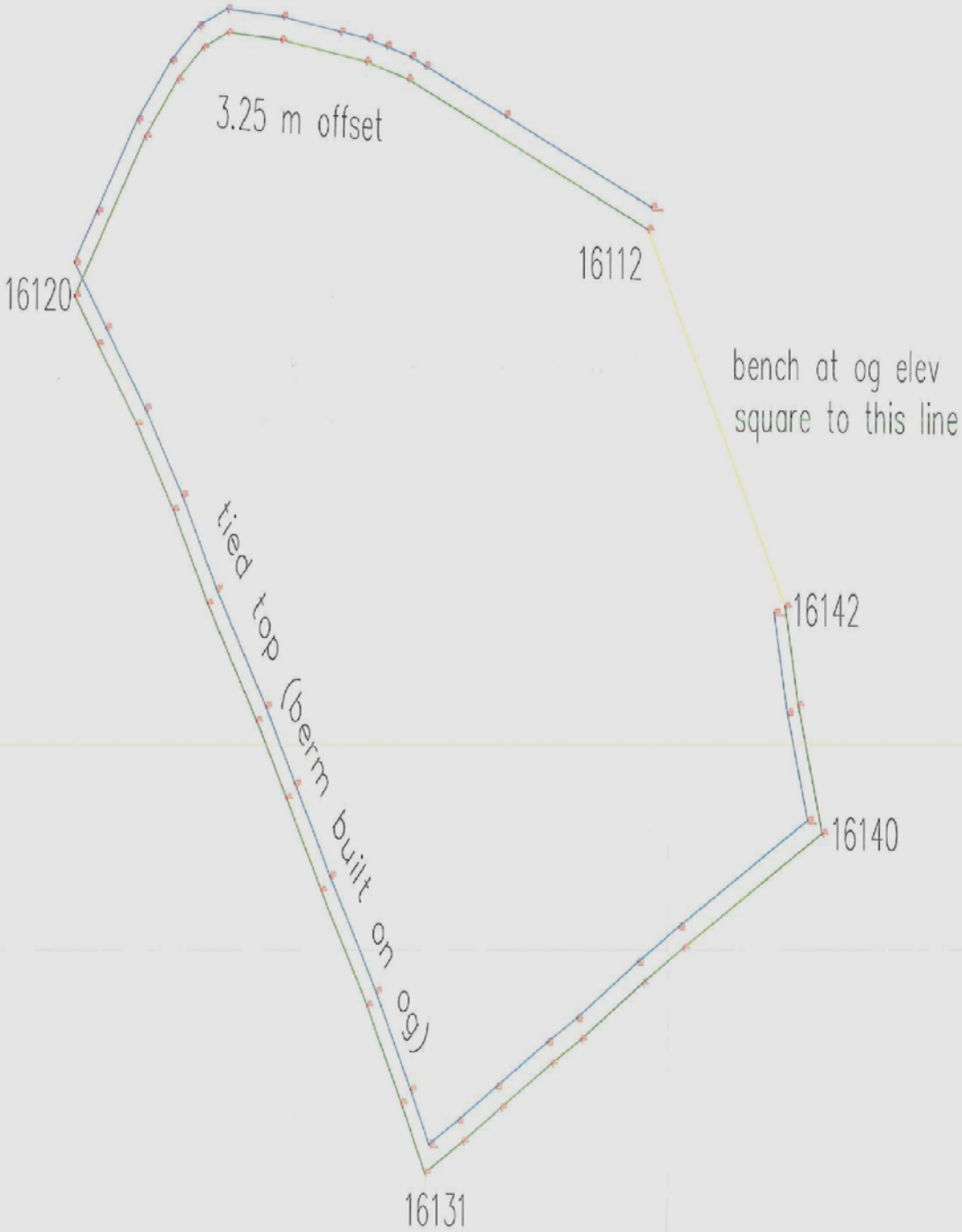
tied top (the berm is being built from the pit bottom)



the 3.25 m offset is cl for a 2.5m wide berm with 2:1 slopes on each side

1330.6 is the top of berm elevation

tied top (the berm is being built from the pit bottom)



Form:

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: October 18th –October 21st ,2011	Inspector(s): Jaymie Skidmore
Site Name: Operations Waste Rock Pad (Ops WRP)	Location/Co-ordinates: KM25 – 25.3
Site Location Description: The area to be excavated in preparation of the New WRP can be characterized as a low lying bog that receives and retains a large amount of water from the surrounding area. The area is thus very moist and consists of thick organics layer. This area lies just north of the Old Arctic Camp Lay down area that is much more compact and stable in nature.	
Weather Conditions: Snow covered, temperature ranges from -15 to 0 ^{o}C, ground has begun to freeze.	
Part 2 – Site Assessment	
Activity: -Original diversion ditch which was installed outside of the pad on the north end is having a drain installed followed by back fill of the organic material that was originally excavated from the area. (PHOTO 1) -French Drain (diversion ditch) installation is complete (PHOTO 4) -Finger drains to divert water into the French Drain are complete. (PHOTO 4) -Backfilling of pad is complete (PHOTO 2) -Levelling and packing of Pad is complete (PHOTO 2) -Berm installation is complete. (PHOTO 3)	
• Liner installation to follow. A base layer of geotech and a 30mm liner will be installed over the surface of the pad. A .5 meter of material will be placed over the liner when it is installed for protection.	
Assessed Risk: Low	
Photos Attached: Yes (4)	
Samples Taken: None	
Additional Information Attached: See Underhill drawings of French Drain and Berm.	
Part 3 –Mitigation Requirements	
Mitigation Required: None	
Mitigation Condition: good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor liner installation.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrant (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: *Ops Waste Rock Pad*	***Date*** October 21st , 2011
	
Photo 1 (11/10/21) Lining the original diveraion ditch with geotach and riprap.	**Photo 2 (11/10/21) Pad has been back filled and leveled in preperation for the geotech and liner.**
	
Photo 3 (11/10/21) The berm has been copleted around the perimeter of the pad.	**Photo 4 (11/10/21) The french drain runs under the Pad and exits here (south end) through a culvert. Is woriking great.**

Wolverine Project

Environmental Inspection Form – Photos

Part 1 – Site Description	
Date: October 29th ,2011	Inspector(s): Matt Kawei
Site Name: Operations Waste Rock Pad (Ops WRP)	Location/Co-ordinates: KM25 – 25.3
Site Location Description: The area to be excavated in preparation of the New Waste Rock Pad. The area lies northeast of the Old Arctic Camp Lay down area. Work is progressing on preparing anchor trench on the berm crest.	
Weather Conditions: Snow covered, temperature ranges from - 5 to 0°C, frozen ground	
Part 2 – Site Assessment	
Activity: - Anchor trenching along the crest of the southwest berm (Photos 1 & 2) - Open northwest corner of the pad to allow equipment to go through for snow & rock removals (Photo 3).	
• Liner installation to follow. A base layer of geomembrane, a 30mm liner and 2nd layer of geomembrane will be installed over the surface of the pad. To cap it off, a 500 mm of road mix material will be placed over the liner for protection.	
Assessed Risk: Low	
Photos Attached: Yes (3)	
Samples Taken: None	
Additional Information Attached: Not applicable	
Part 3 –Mitigation Requirements	
Mitigation Required: None	
Mitigation Condition: Good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Continue monitoring.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrants (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Waste Rock Pad – Day 1	**Date:** October 29, 2011

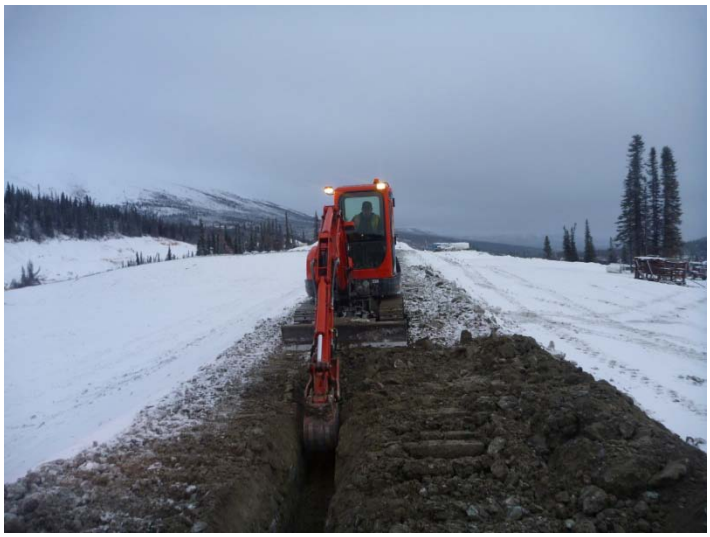



Photo 1 (11/10/29): Looking south – Trenching anchor trench along southwest berm.	**Photo 2 (11/10/29):** Looking north – Trenching anchor trench along southwest berm.
Photo (11/10/29):	**Photo (11/10/29):**

Photo 3 (11/10/29): Looking east – removing loose rocks along southeast berm.

Wolverine Project

Environmental Inspection Form – Photos

Part 1 – Site Description	
Date: October 30th ,2011	Inspector(s): Matt Kawei
Site Name: Operations Waste Rock Pad (Ops WRP)	Location/Co-ordinates: KM25 – 25.3
Site Location Description: The area excavated for a New Waste Rock Pad. The area lies northeast of the Old Arctic Camp Lay down area.	
Weather Conditions: Snow covered, temperature ranges from - 5 to 0°C, frozen ground	
Part 2 – Site Assessment	
Activity: • Rolling out 1st layer geomembrane cloth and anchoring the cloth within the anchor trench (Photo 1). • Rolling out a liner panel over the 1st geomembrane cloth (Photo 2). • Spreading out liner panel over the geomembrane cloth (Photo 3). • Liner panel fully spread and sand bags placed to hold liner (Photo 4). • Rolling 2nd geomembrane cloth over the liner panel (Photo 5). • All geomembrane & liner panel end tucked into the anchor trench. Road mix materials used as anchors over the liners (Photo 6). • Looking west view of the waste rock pad (Photo 7).	
Assessed Risk: Low	
Photos Attached: Yes (7)	
Samples Taken: None	
Additional Information Attached: Not applicable	
Part 3 –Mitigation Requirements	
Mitigation Required: None	
Mitigation Condition: Good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Continue with monitoring.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrants (i.e. major changes)	

Wolverine Project

Environmental Inspection Form – Photos

Site Name: Waste Rock Pad – Day 2	**Date:** October 30, 2011
	
Photo 1 (11/10/30): Looking southeast – 1st geo-membrane protective cloth laid with the ends tugged in and over the anchor trench along the southwest berm.	**Photo 2 (11/10/30):** Looking east - G-panel liner rolled over the 1st layer of geo-membrane cloth.
	
Photo 3 (11/10/30): Looking southwest – Spreading the G-panel liner over the 1st geo-membrane cloth. Bags of sand used to hold the cloth in place.	**Photo 4 (11/10/30):** Looking southeast – G-panel fully spread over the 1st geo-membrane cloth.

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Waste Rock Pad – Day 2	**Date:** October 30, 2011
	
Photo 5 (11/10/30): Looking north – laying 2nd LP16 geo-membrane cloth over the G-panel.	**Photo 6 (11/10/30):** .Looking southeast – G-panel completed. Anchor trench backfilled with materials.

Photo 7 (11/10/30): .Looking west – installing geo-membrane cloth and G-panel liner along the southwest wall; snow removal within the pad and trenching the anchor trench along the perimeter of the pad.

Wolverine Project

Environmental Inspection Form – Photos

Part 1 – Site Description	
Date: October 31st ,2011	Inspector(s): Matt Kawei
Site Name: Operations Waste Rock Pad (Ops WRP)	Location/Co-ordinates: KM25 – 25.3
Site Location Description: The area excavated for a New Waste Rock Pad. The area lies northeast of the Old Arctic Camp Lay down area.	
Weather Conditions: Snow covered, temperature ranges from - 4 to 0°C, frozen ground	
Part 2 – Site Assessment	
Activity: • Rolling out third set of liner panels. 1st layer geomembrane cloth and anchoring the cloth within the anchor trench (Photo 1). • Rolling out a liner panel over the 1st geomembrane cloth (Photo 2). • Spreading out liner panel over the geomembrane cloth (Photo 3). • Liner panel fully spread and sand bags placed to hold liner (Photo 4). • Looking north view of the liner panel over the berm and into the anchor trench (Photo 5). • Looking west view of the waste rock pad. Anchor trenching completed along the southeast and northeast berms (Photo 6).	
Assessed Risk: Low	
Photos Attached: Yes (6)	
Samples Taken: None	
Additional Information Attached: Not applicable	
Part 3 –Mitigation Requirements	
Mitigation Required: None	
Mitigation Condition: Good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Continue with monitoring.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrants (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Waste Rock Pad – Day 3	**Date:** October 31st, 2011
	
Photo 1 (11/10/31): Looking southeast – 1st geo-membrane protective cloth laid with the ends tugged in and over the anchor trench along the southwest berm.	**Photo 2 (11/10/31):** Looking east - A-panel liner rolled over the 1st layer of geo-membrane cloth.
	
Photo 3 (11/10/31): Looking southwest – Spreading the A-panel liner over the 1st geo-membrane cloth.	**Photo 4 (11/10/31):** Looking southeast – G-panel fully spread over the 1st geo-membrane cloth.

Wolverine Project

Environmental Inspection Form – Photos

Photo 5 (11/10/31): Looking north – installing A-panel liner along the southeast wall.

Photo 6 (11/10/31): Looking west – installing geo-membrane cloth and A-panel liner along the southwest wall; completed trenching of anchor trench along the southeast and northeast perimeter of the pad.

Wolverine Project

Environmental Inspection Form – Photos

Part 1 – Site Description	
Date: November 1st ,2011	Inspector(s): Matt Kawei
Site Name: Operations Waste Rock Pad (Ops WRP)	Location/Co-ordinates: KM25 – 25.3
Site Location Description: The area excavated for a New Waste Rock Pad. The area lies northeast of the Old Arctic Camp Lay down area.	
Weather Conditions: Snow covered, temperature ranges from -7 to -4°C, frozen ground	
Part 2 – Site Assessment	
Activity: • Rolling out 4th & 5th liner panel sets. 1st layer geomembrane cloth and anchoring the cloth within the anchor trench (Photo 1). • Rolling out a liner panel over the 1st geomembrane cloth & anchoring with sand bags (Photo 2). • Spreading out panel 4 liner over the geomembrane cloth and tucking in liner into the anchor trench (Photo 3). • 5th liner panel fully spread and tugged into the anchor trench (Photo 4). • High winds prevented the 2nd geomembrane cloth from being spread over the liner 4 panel (Photo 5). • Steady snow and high winds preventing installation of 2nd geomembrane cloth over the 5th liner panel (Photo 6). • Looking west, mid morning installation of liner 3 panel along the southeast section of the pad (Photo 7). • Looking west, mid afternoon installation of liner 4 & 5 panels along the southeast and northeast section of the pad. High winds prevented the installation of the 2nd geomembrane cloth over the panels (Photo 8).	
Assessed Risk: Low	
Photos Attached: Yes (8)	
Samples Taken: None	
Additional Information Attached: Not applicable	
Part 3 –Mitigation Requirements	
Mitigation Required: None	
Mitigation Condition: Good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Continue with monitoring.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrants (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Waste Rock Pad – Day 4	**Date:** November 1, 2011
	
Photo 1 (11/11/01): Looking west – mid morning 3rd liner panel and geomembrane protective cloth laid with the ends tugged in and over the anchor trench along the southeast berm.	**Photo 2 (11/11/01):** Looking west – mid morning 3rd liner panel anchored with sand bags.
	
Photo 3 (11/11/01): mid afternoon - looking west – 4th liner panel installed. Steady southeast winds & snow.	**Photo 4 (11/11/01):** mid afternoon - looking west – 5th liner panel installed. Steady southeast winds & snow.

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Waste Rock Pad – Day 4	**Date:** November 1, 2011
	
Photo 5 (11/11/01): mid afternoon - looking west – 4th liner panel installed. Steady southeast winds & snow.	**Photo 6 (11/11/01):** Looking north – 5th liner panel installed. Lone spectator on the northeast berm.

Photo 7 (11/11/01): .Looking west – Mid morning 3rd liner panel installed along the southwest wall; snow removal within the pad and trenching the anchor trench along the perimeter of the pad.

Photo 8 (11/11/01): Mid afternoon - looking west – 4th & 5th liner panels installed. The 2nd geomembrane cloth cover is yet to be placed over the main liner. Steady southeast winds and snow. Sand bags placed onto the liner.

Wolverine Project

Environmental Inspection Form – Photos

Part 1 – Site Description	
Date: November 2nd ,2011	Inspector(s): Matt Kawei
Site Name: Operations Waste Rock Pad (Ops WRP)	Location/Co-ordinates: KM25 – 25.3
Site Location Description: The area excavated for a New Waste Rock Pad. The area lies northeast of the Old Arctic Camp Lay down area.	
Weather Conditions: Very windy, snow covered, temperature ranges from -15 to -4°C, frozen ground	
Part 2 – Site Assessment	
Activity: • Seaming of liner panel 3 with 4th & 5th. • Roll out and seam 2nd geomembrane cloths to cover panel 4 & 5 liners.	
Assessed Risk: Low	
Photos Attached: No	
Samples Taken: None	
Additional Information Attached: Not applicable	
Part 3 –Mitigation Requirements	
Mitigation Required: None	
Mitigation Condition: Good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Continue with monitoring.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrants (i.e. major changes)	

Wolverine Project

Environmental Inspection Form – Photos

Part 1 – Site Description	
Date: November 3rd ,2011	Inspector(s): Matt Kawei
Site Name: Operations Waste Rock Pad (Ops WRP)	Location/Co-ordinates: KM25 – 25.3
Site Location Description: The area excavated for a New Waste Rock Pad. The area lies northeast of the Old Arctic Camp Lay down area.	
Weather Conditions: Clear skies, snow covered, temperature ranges from -10 to -4°C, frozen ground	
Part 2 – Site Assessment	
Activity: • Continue to fill anchor trench along southeast and northeast berms (Photos 1 & 2). • 1st protective geomembrane cloth laid out. Seaming of the cloths done by Layfield personnel (Photos 3 & 4). • Crane hoisted panel 6 liner onto the northeast berm (Photo 5). • Panel 6 liner stretched out and fully spread over the geomembrane cloths (Photos 6, 7, 8 & 9). • 2nd geomembrane cloth being spread over the panel 6 liner (Photo 10). • General view of the liner installation from the four corners of the WRP (Photos 11, 12, 13 & 14).	
Assessed Risk: Low	
Photos Attached: Yes (14)	
Samples Taken: None	
Additional Information Attached: Not applicable	
Part 3 –Mitigation Requirements	
Mitigation Required: None	
Mitigation Condition: Good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Continue with monitoring.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrants (i.e. major changes)	

Wolverine Project

Environmental Inspection Form – Photos

Site Name: Waste Rock Pad – Day 6	**Date:** November 3rd, 2011
	
Photo 1 (11/11/03): Looking west – Anchoring of liner panels 3, 4 & 5 with road mix materials along the southeast berm.	**Photo 2 (11/11/03):** Looking north – 1st protective geomembrane cloth covers for panel 6 liner tugged into the anchor trench. Trench yet to be filled.
	
Photo 3 (11/11/03): Looking northeast – 1st protective geomembrane cloth covers for panel 6 liner installed.	**Photo 4 (11/11/03):** Seaming of 1st protective geomembrane cloths.

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Waste Rock Pad – Day 6	**Date:** November 3rd, 2011
	
Photo 5 (11/11/03): Looking northeast – Crane hoisting a roll (100 m) of panel 6 liner onto the northeast berm.	**Photo 6 (11/11/03):** Looking northeast – panel 6 liner (100 m) stretched out on geomembrane cloths.
	
Photo 7 (11/11/03): Looking northeast – panel 6 liner being spread over the 1st protective geomembrane cloths.	**Photo 8 (11/11/03):** looking northeast – panel 6 liner close to being completely spread over the geomembrane cloths.

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Waste Rock Pad – Day 4	**Date:** November 3rd, 2011
	
Photo 9 (11/11/03): Looking northeast – panel 6 liner installed. Personnel ensuring sufficient liner overlap are maintained.	**Photo 10 (11/11/03):** Looking west – Panel 6 liner installed. 2nd protective geomembrane cloths being laid over the liner.

Photo 11 (11/11/03): .Looking east – Working continuing to place liners within the pad. Continuing with removal of snow within the pad.

Wolverine Project

Environmental Inspection Form – Photos

Photo 12 (11/11/03): Looking west – Panel 6 liner installed. Roll out panel running north-south direction. The 2nd geomembrane cloth cover is yet to be placed over the main liner.

Photo 13 (11/11/03): Looking west – panel 6 liner installed. Portion of 2nd geomembrane cloth cover is installed over the main liner. Anchor trench filled with road mix material along southeast and northeast berms.

Photo 14 (11/11/03): Looking west – panel 6 liner installed. Portion of the 2nd geomembrane cloth cover installed. Seaming of the liner yet to be done.

Wolverine Project

Environmental Inspection Form – Photos

Part 1 – Site Description	
Date: November 9th, 2011	Inspector(s): Matt Kawei
Site Name: Operations Waste Rock Pad (Ops WRP)	Location/Co-ordinates: KM25 – 25.3
Site Location Description: The area to be excavated in preparation of the New Waste Rock Pad. The area lies northeast of the Old Arctic Camp Lay down area. Work is progressing on preparing anchor trench on the berm crest.	
Weather Conditions: Sunny, Light variable wind; snow covered, temp ranges from - 10 to -5°C, frozen ground	
Part 2 – Site Assessment	
Activity: • Completed liner panels along northeast and southwest berms (Photos 1 & 2). • Completed 2nd geomembrane cloths seamed over the liner panel along northeast corner of the pad (Photos 3 & 4). • General outlay of the WRP showing completed panels (Photos 5, 6 & 7)	
• Liner installation to follow. A base protective layer of geomembrane, a 30mm liner and 2nd layer of geomembrane will be installed over the surface of the pad. To protect the liner from re-bars and other metals mixed with the waste materials, a 500 mm of road mix materials will be placed and packed over the liner.	
Assessed Risk: Low	
Photos Attached: Yes (7)	
Samples Taken: None	
Additional Information Attached: Not applicable	
Part 3 –Mitigation Requirements	
Mitigation Required: None	
Mitigation Condition: Good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Continue monitoring.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrants (i.e. major changes)	

Wolverine Project

Environmental Inspection Form – Photos

Site Name: Waste Rock Pad – Day 12	**Date:** November 9, 2011
	
Photo 1 (11/11/09): Looking east – Laying and seaming geomembrane cloths over liner panel along northeast berm.	**Photo 2 (11/11/09):** Looking south – Completed panels along southwest berm.
	
Photo 3 (11/11/09): Looking southeast – Laying and seaming 2nd geomembrane over liner panel along northeast corner of pad.	**Photo 4 (11/11/09):** Looking south – completion of 2nd protective layer of geomembrane seamed over the liner.

Wolverine Project
Environmental Inspection Form – Photos

Photo 5 (11/11/09): Looking east – Laying more geomembrane along the northeast berm.

Photo 6 (11/11/09): Looking southwest – Laying 2nd layer of geomembrane over the main liner panel.

Photo 7 (11/11/09): Looking west – Laying more panels and geomembrane cloths; anchoring geomembrane cloths and liner within the anchor trench along the northeast berm.

Wolverine Project

Environmental Inspection Form – Photos

Part 1 – Site Description	
Date: November 12th, 2011	Inspector(s): Matt Kawei
Site Name: Operations Waste Rock Pad (Ops WRP)	Location/Co-ordinates: KM25 – 25.3
Site Location Description: The area to be excavated in preparation of the New Waste Rock Pad. The area lies northeast of the Old Arctic Camp Lay down area and approximately 300 metres north of the tailings storage facility.	
Weather Conditions: Variable winds; snow covered, temp ranges from -19 to -5°C & frozen ground.	
Part 2 – Site Assessment	
Activity: • Seaming of protective geomembrane cloths within the pad (Photo 1). • Protective geomembrane cloths seamed. Liner panel extended ready to be spread over the cloth (Photo 2). • Placement and spreading of road mix materials for ramp access (Photos 3 & 4). • Day 13 activities – completed panels within the pad (Photo 5). • Morning of Day 15 activities – First protective geomembrane cloths layer laid for the final liner panel (Photo 6). • Afternoon of Day 15 activities – All three layers of protective geomembrane cloths and final liner panel installed. Layfield personnel seaming panels together. About 100 meters of anchor trench along the north and west berms needed to be filled-in (Photo 7).	
Assessed Risk: Low	
Photos Attached: Yes (7)	
Samples Taken: None	
Additional Information Attached: Not applicable	
Part 3 –Mitigation Requirements	
Mitigation Required: None	
Mitigation Condition: Good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Continue monitoring.	
Monitoring Frequency: Daily	
Reporting Requirements: As conditions warrants (i.e. major changes)	

Wolverine Project

Environmental Inspection Form – Photos

Site Name: Waste Rock Pad – Day 15	**Date:** November 12th , 2011
	
Photo 1 (11/11/12): Looking northeast – Seaming protective geomembrane cloths in preparation for final liner panel installation.	**Photo 2 (11/11/12):** Looking northwest – Protective geomembrane cloths placed within the pad and over the berms.
	
Photo 3 (11/11/12): Looking south – Placing road mix sand over the liner for ramp access.	**Photo 4 (11/11/12):** Looking south – Spreading road mix sand over the liner for ramp access.

Wolverine Project

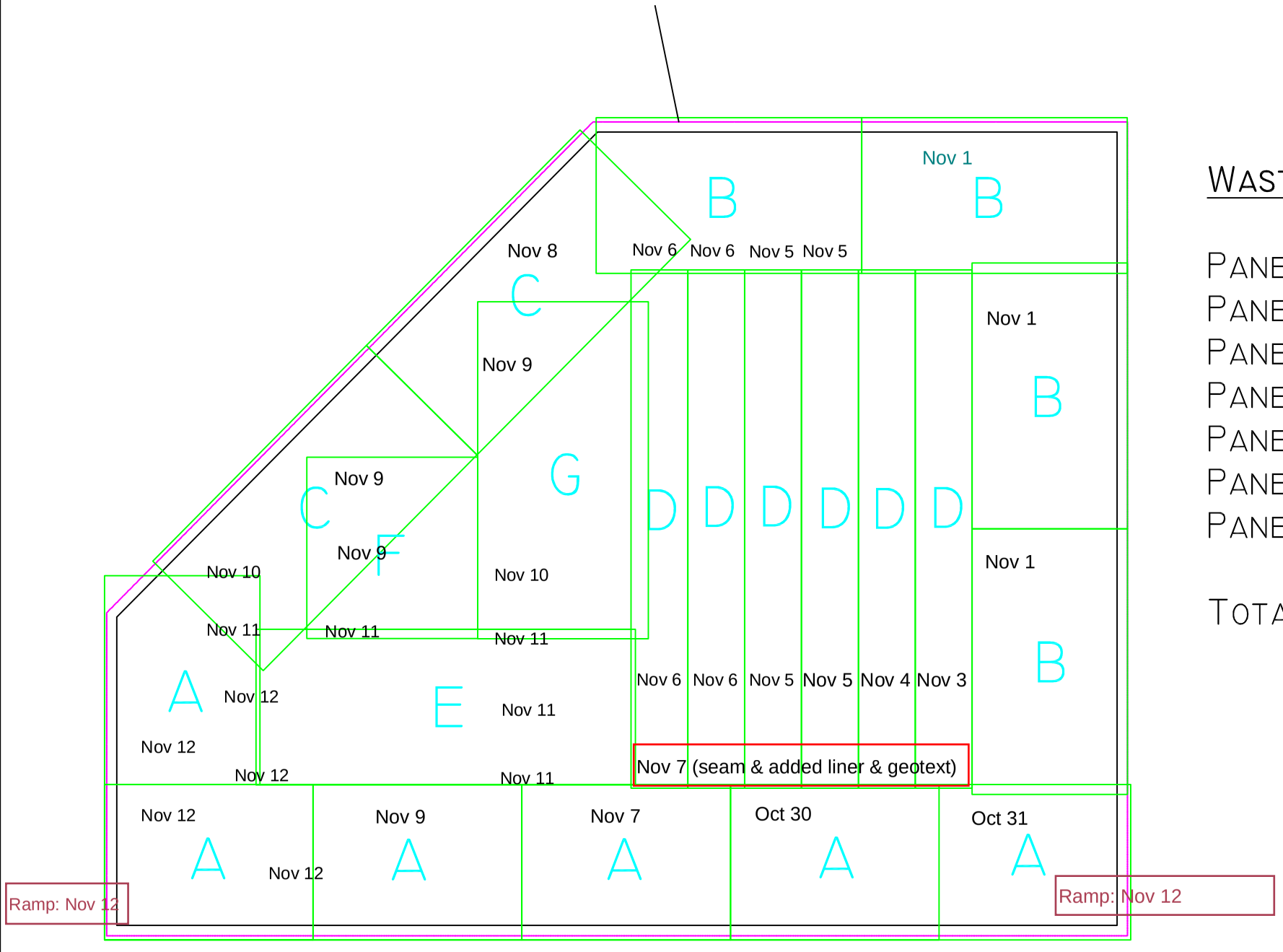
Environmental Inspection Form – Photos

Photo 5 (11/11/10): Looking east (pm) – Day 13 - Laying protective geomembrane cloths within the pad.

Photo 6 (11/11/12): Looking east (am) – Day 15 - Spreading and seaming protective geomembrane cloths in preparation to pull the 2nd last liner panel. Line panel rolled in preparation to spread over the geomembrane. Note: Work is also progressing with building of a ramp at the southwest corner of the pad.

Photo 7 (11/11/12): Looking east (pm) – Day 15 – Layfield personnel seaming liner panels together over the protective geomembrane cloths. Second protective geomembrane cloths rolled over the final liner panel.

NEAT AREA = 26,481M2



WASTE ROCK STORAGE AREA PANEL SIZES

PANEL A - 30M X 40.26M X 6 = 7,247M2
PANEL B - 30M X 51.24M X 4 = 6,150M2
PANEL C - 30M X 58.56M X 2 = 3,513M2
PANEL D - 100M X 10.97M X 6 = 6,582M2
PANEL E - 30M X 73.20M X 1 = 2,196M2
PANEL F - 35M X 32.94M X 1 = 1,153M2
PANEL G - 65M X 32.94M X 1 = 2,142M2

TOTAL BULK AREA = 28,983M2

LEGEND

ANCHOR TRENCH
LINER FIELD SEAM
A PRE-FAB PANEL LABEL

NOTES

Panels with a date means: 3 layer installation and seaming completed on that date. Three (3) layer means: protective LP16 GM cloth/30 mm HPDE liner/protective LP16 GM cloth.

THE PROPOSED LINER PANEL DEPLOYMENT LAYOUT SHOWN HERE IS INTENDED TO BE CONCEPTUAL AND MAY NOT REFLECT THE FINAL AS-BUILT CONDITION. SITE CONDITIONS AND SEQUENCING OF EARTHWORKS OPERATIONS MAY REQUIRE THAT THE DEPLOYMENT LAYOUT BE CHANGED TO SUIT AND WILL SUPERCEDE THIS PROPOSED LAYOUT.

LAYFIELD ENVIRONMENTAL SYSTEMS LTD.

ENVIRO LINER 4030
WASTE ROCK STORAGE AREA
YUKON ZINC
WOLVERINE SITE

Quote No.	PROJECT No.
P3778	12C-146

DWG: 1 OF 1	SCALE: N.T.S.	
DWN: MC	CHKD: GVP	APP'D:
DATE: 09/26/11	REVISION: A	

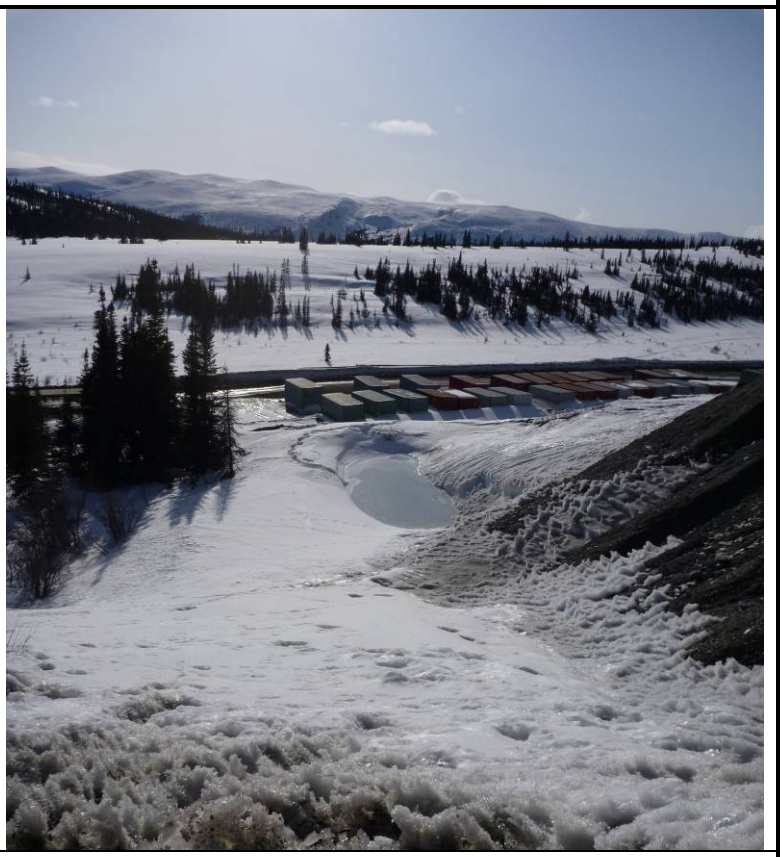
B-SIZE

ANSI B Size Page (Horizontal)

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: March 30th – April 14th, 2011	Inspector(s): Jennie Gjertsen
Site Name: Waste Rock Pad – Waste Rock Sump	Location/Co-ordinates: Waste Rock Pad and Sump ~ Km 27.2
Site Location Description: The waste rock pad is located in an area which is lined and bermed with a large earthen/clay dyke to contain water drainage from the waste rock stored in this area. The waste rock sump is approximately 221m^3 and is also lined. This sump is designed to collect contaminated water runoff from the waste rock pile.	
Weather Conditions: Early spring conditions, some periods of snowfall. Freezing temperatures overnight warming to above 0°C during the day.	
Part 2 – Site Assessment	
Activity: - Waste rock sump water volume monitored daily - Swale installed at entrance to waste pad dumping area, preventing potentially high metal water from running down access ramp	
Site Description: Sump not yet pumped out, swale working to control runoff.	
Assessed Risk: Low	
Photos Attached: Yes	
Samples Taken: No	
Additional Information Attached: none	
Part 3 –Mitigation Requirements	
Mitigation Required: Pump out waste rock sump and pad as required.	
Mitigation Condition: good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor for any runoff potential from the facility	
Monitoring Frequency: Daily, during rain events and as runoff and melt continues.	
Reporting Requirements: As conditions warrant (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Waste Rock Sump and Pad	**Date:** March 30th – April 14th, 2011
	
11/04/03 Melt water running down access ramp of Waste Rock Pad	**11/04/03** Melt water running down access ramp of Waste Rock Pad
	
11/04/04 Monitoring sump water level	**11/04/08** Monitoring sump water level

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Waste Rock Sump and Pad	**Date:** March 30th – April 14th, 2011
	
11/04/12 Swale installed to prevent water from running down road, directed to lined section of pad.	**11/04/12** Swale installed to prevent water from running down road, directed to lined section of pad.

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: June 17th, 2011	Inspector(s): Jaymie Skidmore
Site Name: Waste Rock Pad	Location/Co-ordinates: Waste Rock Pad Km 27.2
Site Location Description: The waste rock pad is located in an area which is lined and bermed with a large earthen/clay dyke to contain water drainage from the waste rock stored in this area. The waste rock sump is approximately 221m^3 and is also lined. This sump is designed to collect contaminated water runoff from the waste rock pile.	
Weather Conditions: Spring conditions. Sunny with some rain. Average temperature 18C.	
Part 2 – Site Assessment	
Activity: - The west side of the pad was built up to allow greater capacity and a more stable berm. See photo 3 - A larger berm was built up around the pad to ensure all material and runoff is contained and to deter additional runoff from entering pad. See photo 2	
Site Description:	
Assessed Risk: Low	
Photos Attached: Yes (4)	
Samples Taken: No	
Additional Information Attached: none	
Part 3 –Mitigation Requirements	
Mitigation Required: Pump out waste rock sump and pad as required.	
Mitigation Condition: good	
Part 4 –Monitoring Requirements	
Follow-up Monitoring: Monitor for any runoff potential from the facility	
Monitoring Frequency: Daily, during rain events.	
Reporting Requirements: As conditions warrant (i.e. major changes)	

Wolverine Project
Environmental Inspection Form – Photos

Site Name: Waste Rock Pad	**Date:** June 17th, 2011
	
Photo 1 11/06/17 WRP now has a west wall and larger surrounding berm.	**Photo 2 11/06/17** Berm is to allow proper drainage.
	
Photo 3 11/06/17 WRP with completed west wall.	**Photo 4 10/07/28** Picture taken of WRP prior to work (i.e., No west wall).

Wolverine Project
Environmental Inspection Form

Part 1 – Site Description	
Date: *October 04th, 2011*	Inspector(s): *Matt Kawei, Ronald Bertrand & Shawn Parry*
Site Name: *YZC Truck Shop*	Location/Co-ordinates: *Km 28.7*
Weather Conditions: *Overcast, light variable winds, air temperature: -3.1°C.*	

Part 2 – Site Assessment

Activity:

- *Housekeeping inspection of the YZC Truck Shop.*

At the time of the inspection, contractor personnel were carrying out regular maintenance on a jumbo. Housekeeping within the shop requires some attention.

- ***Photo 1:*** *Drums of engine oil loosely placed on a pallet. A pump inserted into a drum with the dispensing end lying on the pallet, with potential for dripping oil onto the cement floor. No spill kit visible nearby.*
- ***Photo 2:*** *Waste oil drums & gas container without proper containment.*
- ***Photo 3:*** *Absorbent pad fully soaked with waste oil. Pad just lying on the cement floor.*
- ***Photo 4:*** *General shop area without marked/painted lines between machines & walls.*

Site Status:

- *Drips of hydrocarbons on cement floors, general housekeeping around heavy equipment untidy and no general markings on cement floor to provide a safe distance between heavy equipment and shop personnel.*
- *Spill kits not visible or readily available.*

Assessed Risk*: Current risk level is **low** of which it will be a proactive approach to consider controls. Continued ignorance of housekeeping can move risk level to **moderate** of which it is preferable to set controls within the Shop.*

Photos Attached: *Yes*

Samples Taken: *Not applicable*

Additional Information Attached: *No*

Part 3 –Mitigation Requirements

Mitigation Required: *(i) Provide proper hydrocarbon containment trays for engine and oil change; (ii) securing of dispensing nozzle; (iii) securing of drums on pallets; provide sufficient spill kit (s) for the shop; and consider marking/paint lines within the shop between equipment/machines and safe walking access for people & installed panels along the walls.*

Mitigation Condition: *Improve on housekeeping within the Shop*

Part 4 –Monitoring Requirements

Follow-up Monitoring: *Once per rotation.*

Monitoring Frequency: *Once per rotation.*

Reporting Requirements: *As required.*

Wolverine Project
Environmental Inspection Form – Photos

Site Name: YZC Truck Shop	**Date:** October 04, 2011
	
Photo 1 (11/10/04): Improper hydrocarbon – oil storage. Poor housekeeping in the shop.	**Photo 2 (11/10/08):** Poor housekeeping – gas & oil drums on cement. Accident waiting to happen.
	
Photo 3 (11/10/04): Absorbent soaked under heavy equipment. Needs proper containment while working on engines on regular bases.	**Photo 4 (11/10/04):** General shop area without marked/painted lines between machines/equipment, and safe designated walk path.