



Faro Mine Complex Care & Maintenance

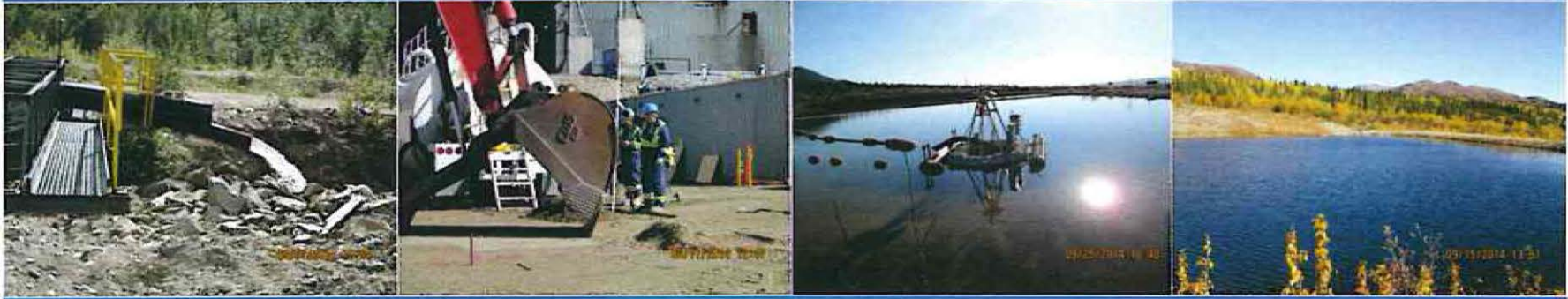
Tlich Engineering and Environmental Services

Quarter 2 Performance Report

July to Sept 2014

08/07/2014 16:34

Faro Mine Complex Care & Maintenance



Q2 Performance Presentation

- Opening Remarks
- Health & Safety
- Site Activities
- Environmental
- AYFN Training & Participation
- Closing Remarks

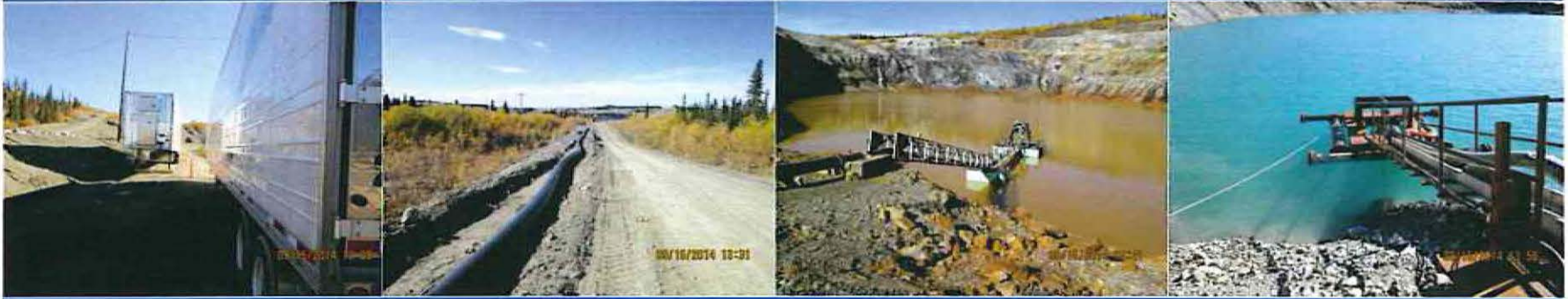
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Health and Safety – Incidents

Month	Number of Incidents Reported	Incident Description	Action Taken/ Response
July 2014	<p>No LTI's (lost time injuries)</p> <p>One MTC's (medical treatment cases)</p> <p>Three incidents reported</p>	<p>MTC was a sprained ankle while operator was dismounting a piece of equipment</p> <ol style="list-style-type: none"> 1. Minor property damage to overhead door at back of admin building 2. Broken rear window on millwrights truck 3. Un-reported damage to counter weight on excavator 	<p>Employee was taken to Nurses station for treatment</p> <p>Incident was investigated and discussed with HEO's. 3 pt contact</p> <p>Discussed incident during morning toolbox meeting, and we are in process of making new unloading area at Bay 11</p> <p>Window replaced and cause investigated</p> <p>Reviewed importance of Pre and Post Op inspections</p>

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Health and Safety - Incidents

Month	Number of Incidents Reported	Incident Description	Action Taken/ Response
August 2014	<p>No LTI's (lost time injuries)</p> <p>One MTC's (medical treatment cases)</p> <p>Three contractor incidents reported</p>	<p>One employee bumped into another employee at the security desk. Employee experienced sore ribs. Employee seen First aid</p>	<p>Employee was further examined at nursing station and returned to work</p>

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Health and Safety - Incidents

Month	Number of Incidents Reported	Incident Description	Action Taken/Response
Sept 2014	<p>No LTI's (lost time injuries)</p> <p>Five incidents reported.</p> <p>One first aid</p> <p>One near miss</p> <p>Three property damage</p>	<p>Near Miss - Individual driving too fast</p> <p>FA – Slip and Fall</p> <p>Property Damage:</p> <ol style="list-style-type: none"> 1. HFT, tank imploded 2. Fuel Line on Godwin Pump 3. Frozen Emergency Shower (VTP) 	<ul style="list-style-type: none"> -Post speed limits Down Valley -Changed sampling process DV -Supplier to investigate HFT -Secondary containment established -Heat trace shower system

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Health and Safety – Activities

Month	Activities/ Work Completed	Improvements/Efficiencies
July 2014	<p>Monthly Inspections of Warehouse, Cat Bays, Warm Storage, Potable Water building, Norcan shop, Welding shop, V-15 Pump Station, Zone 2 Pump Station, IP Sea Cans, S-Well Sea Can, Guardhouse, Dry, Lunchroom, Millwright and Electrician shop, S-Well Generator building, Environmental Storage building and Lab.</p> <p>Monthly testing and calibration of stationary oxygen monitors and portable monitors are complete for: V-15 Sea Can, Zone 2 Sea Can, IP Sea Cans and S-Well Sea Can.</p> <p>Light duty and heavy equipment first aid kit and fire extinguisher inspections are ongoing.</p> <p>Monthly first aid inventory for the ambulance, treatment room and emergency kits are complete.</p> <p>113 orientations done for July</p>	<p>Safety Manuals and Training Matrix being updated</p> <p>Online WHIMIS courses taken by employees</p>

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Health and Safety – Activities

Month	Activities/ Work Completed	Improvements/Efficiencies
August 2014	<p>Monthly Inspections of Warehouse, Cat Bays, Warm Storage, Potable Water building, Norcan shop, Welding shop, Guardhouse, Dry, Lunchroom, Millwright and Electrician shop, S-Well Generator building, Environmental Storage building ,Lab, S-Well Sea Can, IP Sea Can, Zone 2 Sea Can and V-15 Sea Can.</p> <p>The monthly testing and calibration of stationary oxygen monitors and portable monitors are complete for: S- Well Sea Can, IP Sea Cans, Zone 2 Sea Can and V-15 Sea Can</p> <p>Light duty and heavy equipment first aid kit and fire extinguisher inspections are ongoing.</p> <p>Monthly first aid inventory for the ambulance, treatment room and emergency kits are complete.</p> <p>69 Orientations done for August</p>	<p>One employee attended Principles of Health and Safety Management course.</p> <p>Annual blood and audiometric tests completed.</p> <p>Employees are taking TDG online courses</p>

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Health and Safety – Activities

Month	Activities/ Work Completed	Improvements/Efficiencies
Sept 2014	<p>Monthly Inspections were conducted of Warehouse, Cat Bays, Warm Storage, Potable Water building, Norcan shop, Welding shop, Guardhouse, Dry, Lunchroom, Millwright and Electrician shop, S-Well Generator building, Environmental Storage building, Lab, S Well Sea Can, IP Sea Can, V-15 Sea Can and Zone 2 Sea Can.</p> <p>Monthly test and calibration of the stationary oxygen monitors and portable oxygen monitors are complete for: S-Well Sea Can, IP Sea Cans, V-15 Sea Can and Zone 2 Sea Can.</p> <p>Light duty and heavy equipment first aid kit and fire extinguisher inspections are ongoing.</p> <p>Monthly First aid inventory for the ambulance treatment room and emergency kits are complete.</p> <p>Orientations up to June 27</p>	<p>Continued with WHMIS online courses</p> <p>Employee attended Leadership for Safety Excellence</p> <p>Total Fire Protection on site for annual system maintenance and inspection</p> <p>WCB preformed a site inspection. All action items have been closed except for scheduling ERT training.</p>

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Contaminated Water Management

Month	Activities/ Work Completed	Improvements/Efficiencies
July 2014	<p>4,032 m³ of water was pumped from the s-wells during July</p> <p>Zone II well pumped 5,986 m³ for the month of July</p> <p>V-15 pumped water as required through out July</p> <p>The GSC lined pond was pumped as required and moved 2,471m³ to Vangorda Pit during July</p> <p>LCD pumped 7,934 m³ to Vangorda Pit in July</p>	<p>Faro Barge was decommissioned and removed from Faro pit</p> <p>Inspected new Cornell pump skid at Miller Engineering plant in Arizona</p> <p>Completed water intake design for Faro Pit</p> <p>Improving lime distribution at CVP by adding and extending pipeline to the east</p>

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Contaminated Water Management

Month	Activities/ Work Completed	Improvements/Efficiencies
Aug 2014	<p>IP to Faro pumping was suspended for the month of August to ensure we had enough IP water for new treatment plant commissioning</p> <p>S-Well pumping continued at a flow rate of 1.9 litres per second for a total of 4,595m³ in August</p> <p>GSC pumped 1,911m³ to the Vangorda pit during the month</p> <p>LCD pumped 7,867m³ to the Vangorda pit</p> <p>Zone II pumped 5,130 m³ in August</p> <p>Pumping from V- 15 in August was done on an as needed basis</p>	<p>New Grum sludge line being fused and placed for dredging sludge to Grum pit</p> <p>Pioneer pump placed and hooked up at Faro Pit for supplying new treatment plant water for commissioning</p> <p>S-well auto mode repairs completed and system is back in automatic</p> <p>Porta Batch moved and in place for the IWTP Aug 10th</p>

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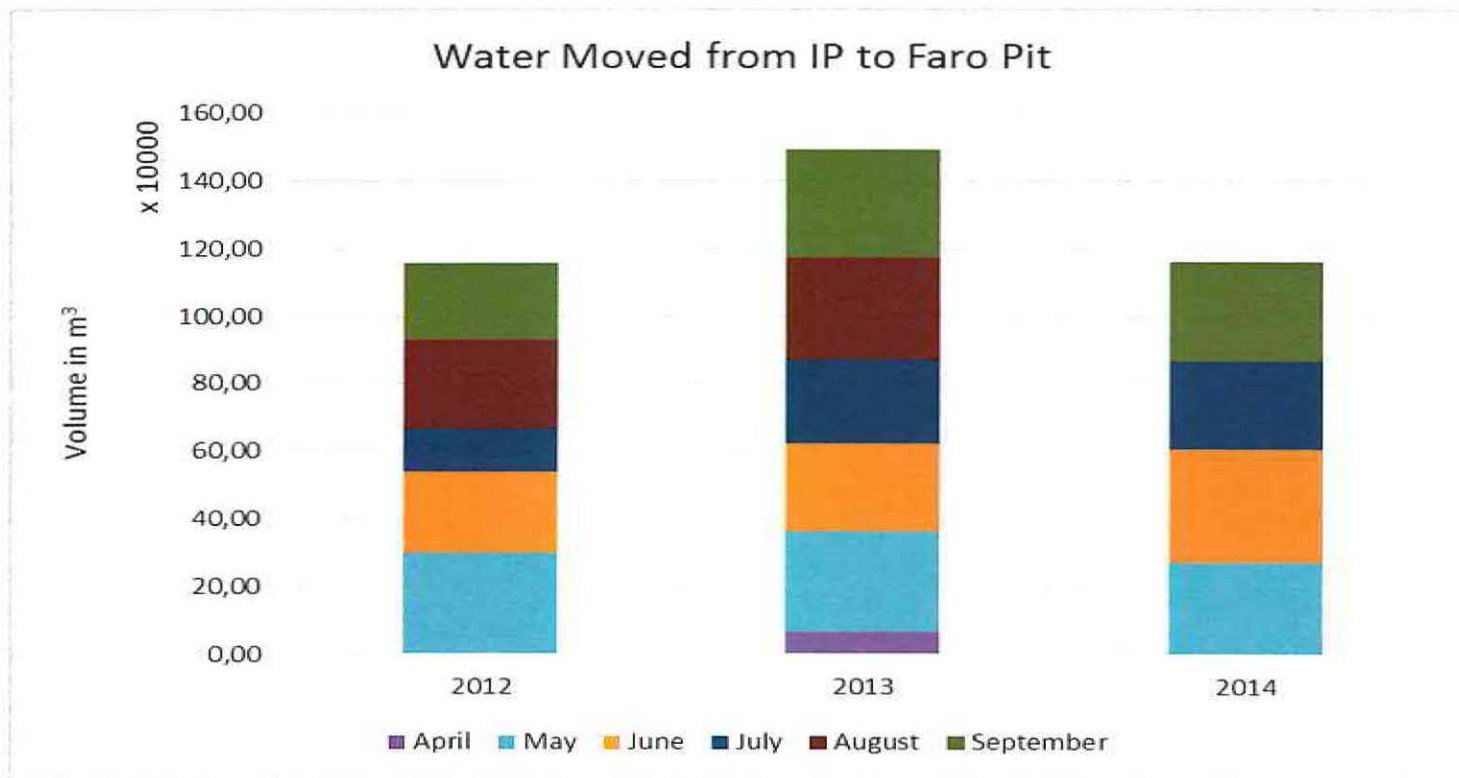
Contaminated Water Management

Month	Activities/ Work Completed	Improvements/Efficiencies
Sept 2014	<p>IP to Faro Pit pumping restarted September 2nd. Transformer for Cornell Pump installed on the 25th. Intake for Cornell to arrive late October.</p> <p>Commissioning the IWTP began Sept 9th. TEES provided slaked lime as required.</p> <p>Discharged through siphon at CVP for app one week. Had to shut down due to high turbidity.</p> <p>Vangorda treatment plant shut down Sept 27th for the season.</p> <p>Piping work for the filtration trailers ongoing</p> <p>Dredging activities latter part of the month</p>	<p>Adjusted Hertz on Zone II pump to increase pumping capacity</p> <p>Note:</p> <p>Work at the filtration trailers was stopped for a period of two weeks waiting for investigation to be completed.</p>

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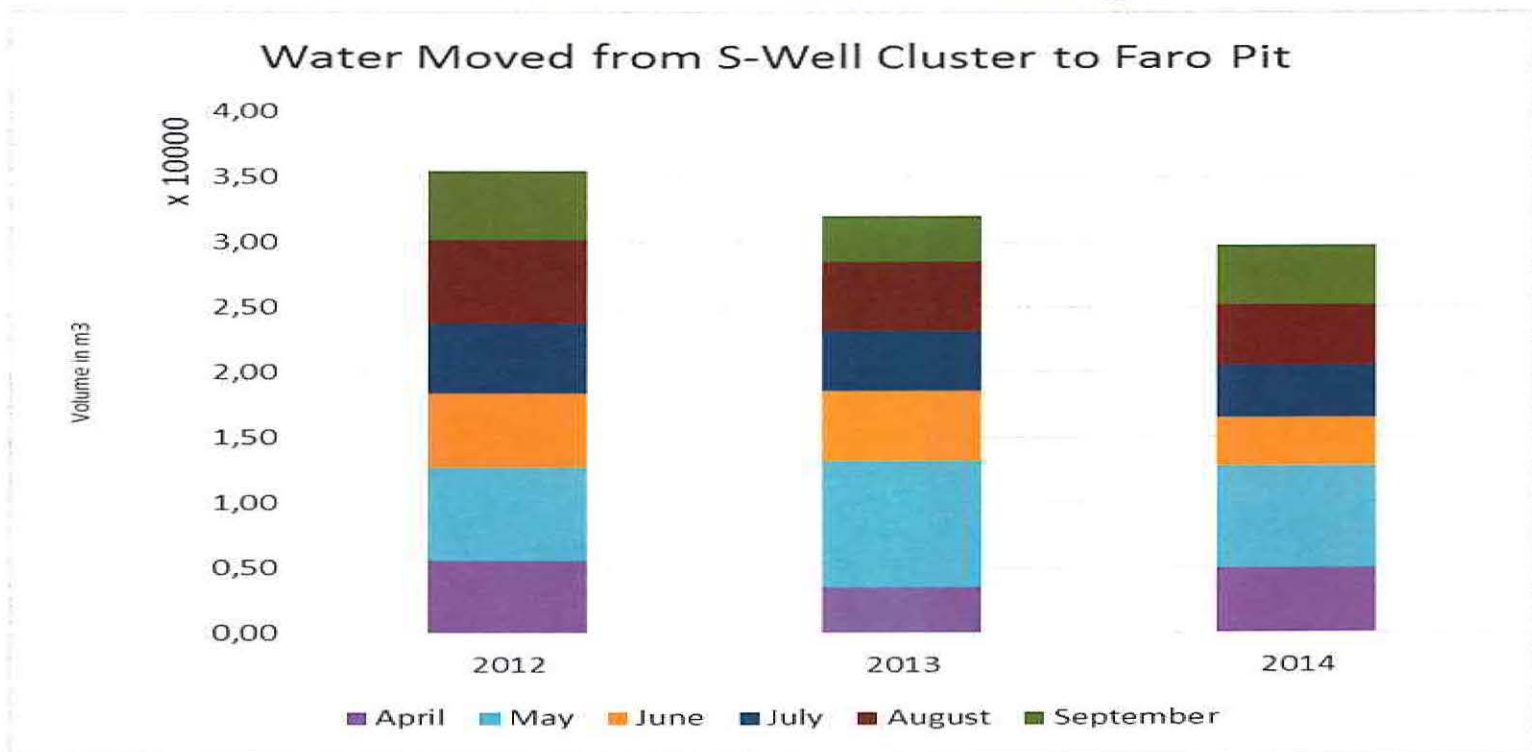
Contaminated Water Management



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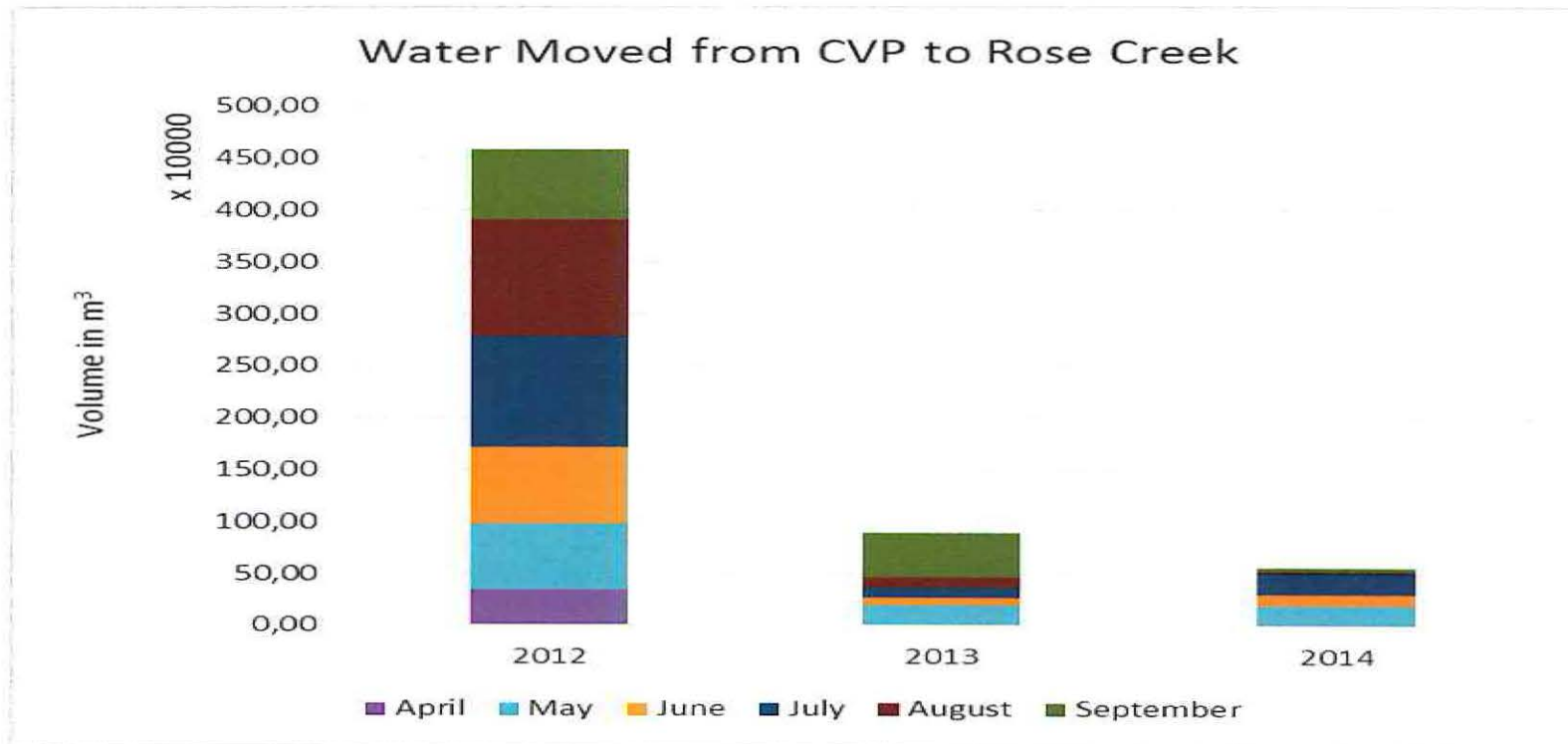
Contaminated Water Management



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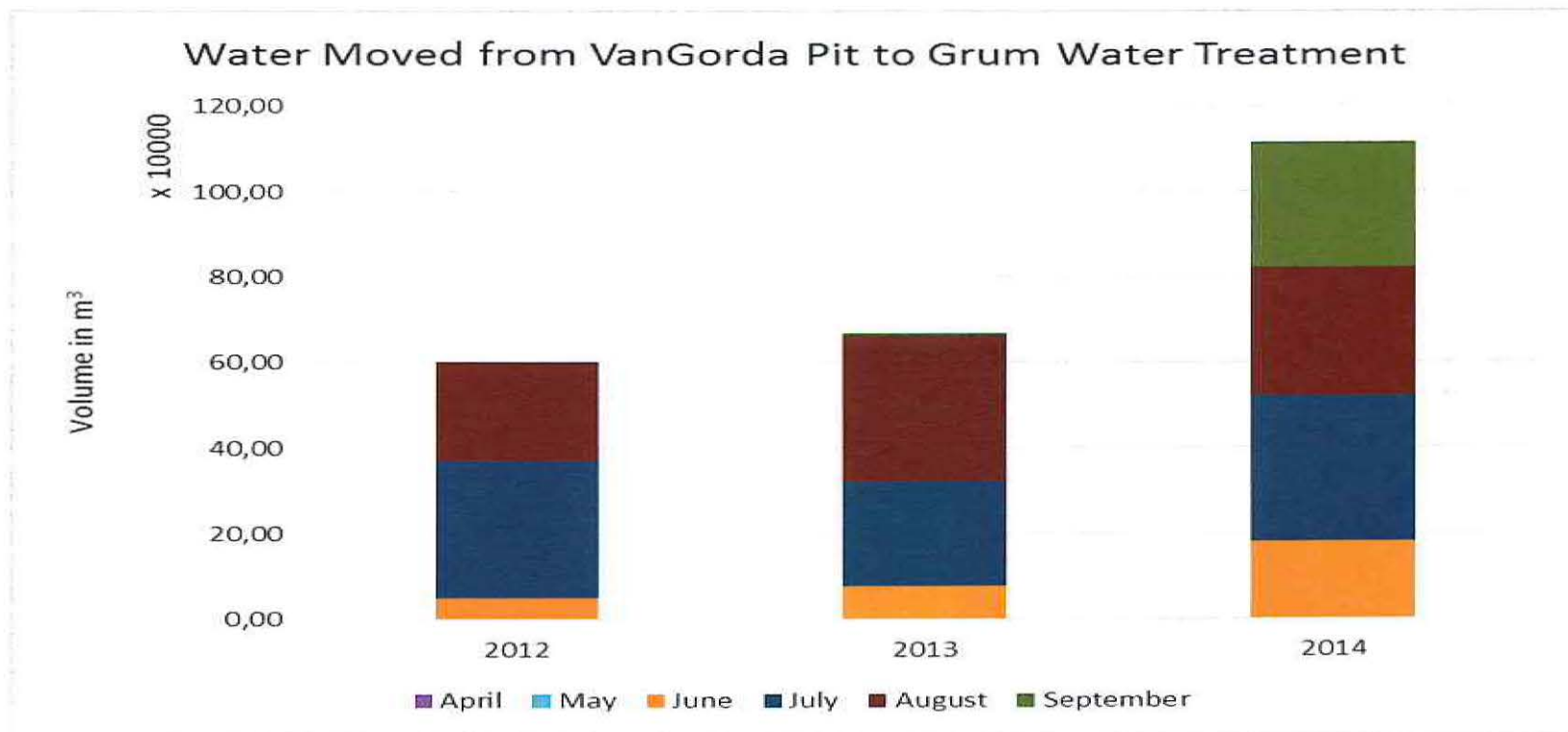
Contaminated Water Management



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Contaminated Water Management



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Fresh Water Management

Month	Activities/ Work Completed	Improvements/Efficiencies
July 2014	<p>All Creeks and Diversions were checked daily, no issues</p> <p>CVP discharged 199,342m³ to the environment bring elevation of pond down 0.79 meters</p> <p>205 metric tons of lime was introduced into the CVP in July through the Porta Batch Down Valley</p>	<p>Maintenance on the Faro Diversion was performed which included covering some exposed liner in creek bed and armouring creek banks</p> <p>Floats on 16 inch siphon were repaired and new suction bell was fabricated and installed</p> <p>Filter trailers were secured for filtering CVP water</p>

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Fresh Water Management

Month	Activities/ Work Completed	Improvements/Efficiencies
Aug 2014	<p>All creeks and diversions were checked daily, no major issues</p> <p>CVP was monitored closely and we discharged when readings were compliant</p> <p>Portable Batch plant continued introducing lime to CVP until Aug 7th</p> <p>Pipe work and pump placement for the Filter trailers at the CVP area</p> <p>CVP siphon discharged 22,534 m³ of water during the month of August</p>	<p>Filter trailers arrived and were placed at CVP</p> <p>Pad at CVP was prepared and increased in size for the arrival of the Filter trailers</p>

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Fresh Water Management

Month	Activities/ Work Completed	Improvements/Efficiencies
Sept 2014	<p>All creeks and diversions were checked daily , no issues.</p> <p>CVP siphon discharged 34,764 m³ of water during the month of Sept. Needed to be shut down due to high turbidity.</p>	<p>Constructed safety berm going to Faro diversion</p> <p>Cleaned up excess piping in Zone II area</p>

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Maintenance

Month	Activities/ Work Completed	Improvements/Efficiencies
July 2014	<p>Regular Preventative maintenance and servicing was performed on light and heavy duty vehicles.</p> <p>Daily inspection on pumps performed and scheduled maintenance on diesel pumps</p> <p>Insulation and window installation was being done during July on the work shops for the millwright and electrician</p> <p>Ongoing site support for site activities</p> <p>Regular site checks performed on daily basis through out site by trades people</p>	<p>Yearly None Destructive Testing was done on site lifting devices</p> <p>Shear bolts replaced on Portabatch unit auger</p> <p>Installed battery operated flow meters on different pipe lines around site</p>

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Maintenance

Month	Activities/ Work Completed	Improvements/Efficiencies
<p>Aug 2014</p>	<p>Regular Preventative maintenance and servicing was performed on light and heavy duty vehicles.</p> <p>Daily inspection on pumps performed and scheduled maintenance on diesel pumps</p> <p>Regular site checks performed on daily basis throughout site by trades people</p>	<p>Made some changes on electrical panel for the dredge system</p> <p>Worked close with Yukon Energy in having smooth transitions from grid power to generator power and back.</p>

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Maintenance

Month	Activities/ Work Completed	Improvements/Efficiencies
<p>Sept 2014</p>	<p>Minor repairs done on Equipment as required</p> <p>Servicing diesel pumps on a regular basis</p> <p>Installing flow meters on pipelines</p>	<p>Mechanical and electrical support to site pump systems as required</p> <p>Placed flow meters on pumping system to have a better and more accurate site water balance management</p>

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Up-coming Operations Activities

3rd Quarter	Normal Site Activities Planned	New Site Activities planned
2014	<ul style="list-style-type: none"> Continue CVP discharge as required Provide assistance as required for ITWP commissioning Assist Veolia with operation of the IWTP Operate filtration trailers into the shoulder season Remove and winterize pumps and barges Prepare site for winter 	<ul style="list-style-type: none"> Train employees at the new treatment facility Continue treating water through new treatment plant for as long as possible Install and commission new Cornell pump at Faro pit 20" effluent line to environment

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Environment – SOW

Type of Activity	Details	Challenges	Cause	Action taken
Water Quality	<ul style="list-style-type: none"> ✓ Surface Water ✓ Seepage ✓ Groundwater ✓ QA/QC ✓ Bioassays ✓ Potable Water ✓ Monthly Reporting 	Values outside historic range	Various	Retest requested through Maxxam Analytics and values confirmed or corrected. Increased monitoring for the North Fork of Rose Creek
		No chlorination occurring in potable water	Causes summarized in WESA report "Faro Mine Pumping Systems Observations and Recommendations"	Report recommendations should be implemented this fiscal year.

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Environment – SOW

Type of Activity	Details	Challenges	Cause	Action taken
Flow Monitoring	<ul style="list-style-type: none"> ✓ Staff Gauge Readings ✓ In-stream Flows ✓ Weir Flows ✓ Estimated Flows ✓ In-pipe Flows ✓ Continuous Monitoring ✓ Salt Slug Flows ✓ Monthly Reporting 	No discharge measurements taken	Hazardous conditions; Turbid water	Measurements were conducted when safer conditions occurred. Unable to obtain an accurate measurement due to turbid water.
		Weir plates in need of maintenance	Deterioration over time	Required maintenance list compiled and resubmitted to Site Superintendent in October 2014

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Environment – SOW

Type of Activity	Details	Challenges	Cause	Action taken
Meteorological	<ul style="list-style-type: none"> ✓ Monthly Downloads ✓ Station Battery Checks ✓ Monthly Reporting 	-	-	-
Site Inspections	<ul style="list-style-type: none"> ✓ Log of Observations ✓ Photos 	-	-	-
CVP Monitoring	<ul style="list-style-type: none"> ✓ Depth Profile Sampling ✓ In-House Analysis 	-	-	-

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Environment – Non-Routine Activities

Type of Activity	Details	Challenges	Cause	Action taken
Geotechnical Monitoring	<ul style="list-style-type: none"> ✓ Observations ✓ Pit Wall Regression Measurements ✓ Slope Stability Measurements ✓ Water Level Elevations ✓ Staff Gauge Readings ✓ Discharge Measurements ✓ Weir Flows ✓ Continuous Flow Monitoring ✓ Rating Curve Updates ✓ Slope Indicator Readings ✓ Piezometer Readings ✓ Thermistor Readings ✓ Equipment Maintenance 	No observations made	Equipment removed from service	Equipment sent back to RST Instruments for maintenance and recalibration
		No discharge measurements taken	Hazardous conditions; Turbid water	Measurements were conducted when safer conditions occurred. Unable to obtain an accurate measurement due to turbid water.
		Weir plates in need of maintenance	Deterioration over time	Required maintenance list compiled and resubmitted to Site Superintendant in October 2014
		Staff gauges in need of maintenance	Ice / freshet damaged gauges	Required maintenance was completed in July

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Environment – Special Projects

Type of Activity	Details	Challenges	Cause	Action taken
S-Wells Monitoring	<ul style="list-style-type: none"> ✓Continuous Monitoring ✓Piezometer Readings 	Wells in need of maintenance	Deterioration over time	Reported to YG on a monthly basis
CH2M Hill Support	<ul style="list-style-type: none"> ✓Data Logger Downloads ✓Discharge Measurements ✓Interim Water Treatment System Surface Water Sampling ✓Water Quality Analysis 	-	-	-
Grum Sulphide Cell Monitoring	<ul style="list-style-type: none"> ✓Water Level Elevations ✓Continuous Monitoring ✓TSS Analysis ✓Zinc Analysis 	-	-	-
Intermediate Pond to Faro Pit Sampling	<ul style="list-style-type: none"> ✓Surface Water Sampling ✓Discharge Monitoring 	Ferrous Iron analysis completed within hold time	Shipping errors	Contacted Air North Cargo for each sampling event to ensure samples were sent to the correct location on the correct flights

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Environment – Special Projects

Type of Activity	Details	Challenges	Cause	Action taken
Iron Seep Sampling South of NF2	<ul style="list-style-type: none"> ✓ Seepage Water Sampling ✓ Zinc Analysis ✓ Discharge Monitoring 	-	-	-
Iron Seep Sampling at the Exposed Bottom of NRFC Pond	<ul style="list-style-type: none"> ✓ Seepage Water Sampling ✓ Zinc Analysis ✓ Discharge Monitoring 	-	-	-
Additional Rose Creek Monitoring 1	<ul style="list-style-type: none"> ✓ Surface Water Sampling ✓ Zinc Analysis ✓ Discharge Monitoring 	No discharge measurements taken	Hazardous conditions; Turbid water	Measurements were conducted when safer conditions occurred. Unable to obtain an accurate measurement due to turbid water.

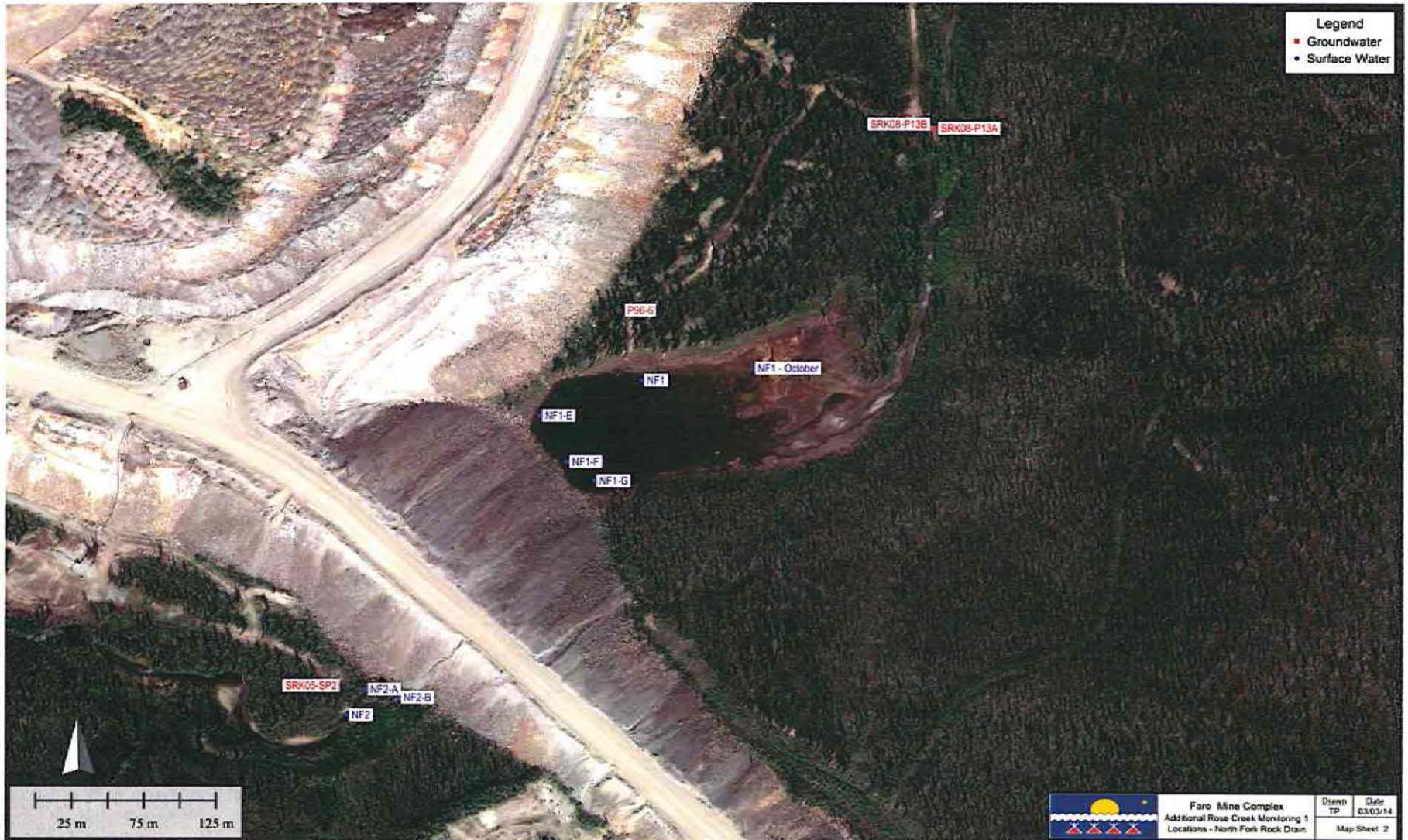
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Additional Rose Creek Monitoring



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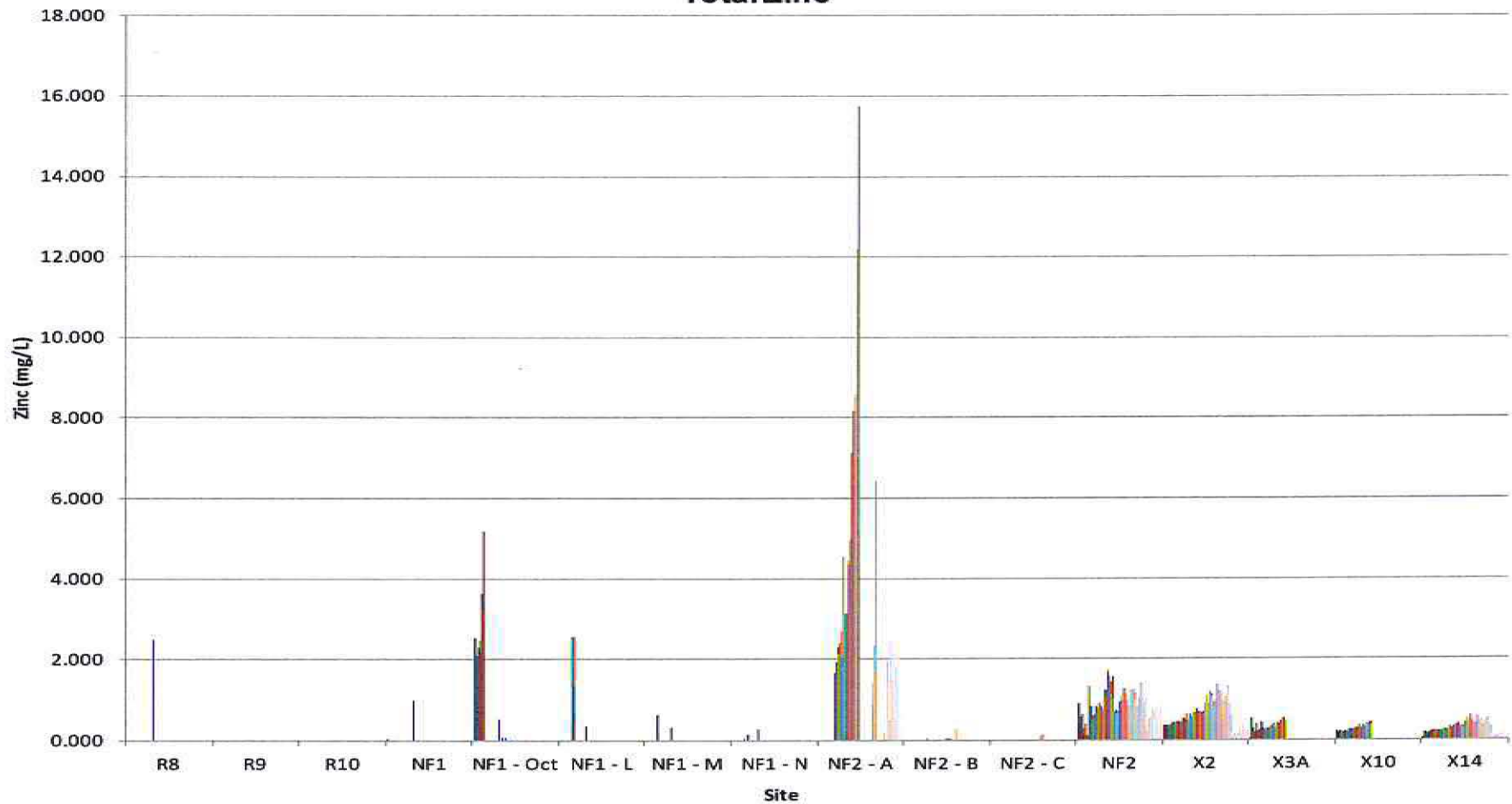
Additional Rose Creek Monitoring



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Additional Rose Creek Monitoring

November 23rd, 2013 - September 25th, 2014
Total Zinc



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Environment – FMC Laboratory

Type of Activity	Details	Challenges	Cause	Action taken
Maintenance and Operation	<ul style="list-style-type: none"> ✓ Analytical and Equipment Supplies ✓ Consumables ✓ Stock Management ✓ House-keeping ✓ Maintenance Log ✓ Equipment Maintenance ✓ Lab Improvements ✓ Proficiency Testing ✓ Training 	ICP not operating correctly	Temperature fluctuations	Air conditioners installed
		Reverse Osmosis unit not operating correctly	Precipitate build up in filter system	New filtration system ordered and installed

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Environment – Compliance

July 2014

Compliance Site	Compliance Met	Non-Compliant Parameter Value	Effluent Quality Standard Value	Comments
X5	Yes	-	-	-
X13	No	Colour – 60 TCU	Colour – ≤ 20 TCU	Site has historically shown problems with Colour. Water quality in the Cross Valley Pond has decreased. FMC Laboratory has attained proficiency in Colour analysis
V2	No	TSS – 18.5 mg/L	TSS – ≤ 15 mg/L	Trend developing of high TSS results this quarter. Investigation taking place into possible upstream disturbance during sampling events.
V25BSP	Yes	-	-	-

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Environment – Compliance

August 2014

Compliance Site	Compliance Met	Non-Compliant Parameter Value	Effluent Quality Standard Value	Comments
X5	Yes	-	-	-
X13	No	Colour – 50 TCU	Colour – ≤ 20 TCU	Site has historically shown problems with Colour. Water quality in the Cross Valley Pond has decreased. FMC Laboratory has attained proficiency in Colour analysis
V2	No	TSS – 26.4 mg/L	TSS – ≤ 15 mg/L	Trend developing of high TSS results this quarter. Investigation taking place into possible upstream disturbance during sampling events.
V25BSP	Yes	-	-	-

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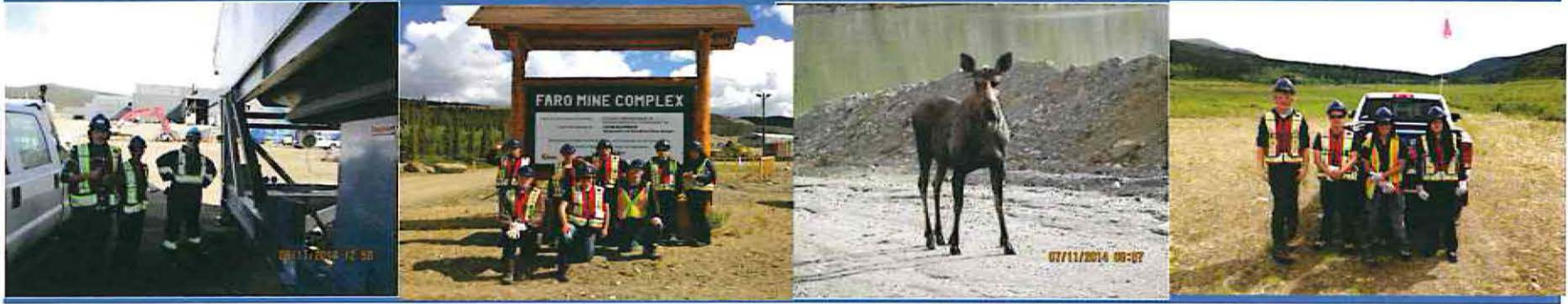


Environment – Compliance

September 2014

Compliance Site	Compliance Met	Non-Compliant Parameter Value	Effluent Quality Standard Value	Comments
X5	Yes	-	-	-
X13	Yes	-	-	-
V2	No	TSS – 23.5 mg/L Colour – 30 TCU	TSS – ≤ 15 mg/L Colour – ≤ 20 TCU	Trend developing of high TSS results this quarter. Investigation taking place into possible upstream disturbance during sampling events.
V25BSP	Yes	-	-	-

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AYFN - Training and Participation

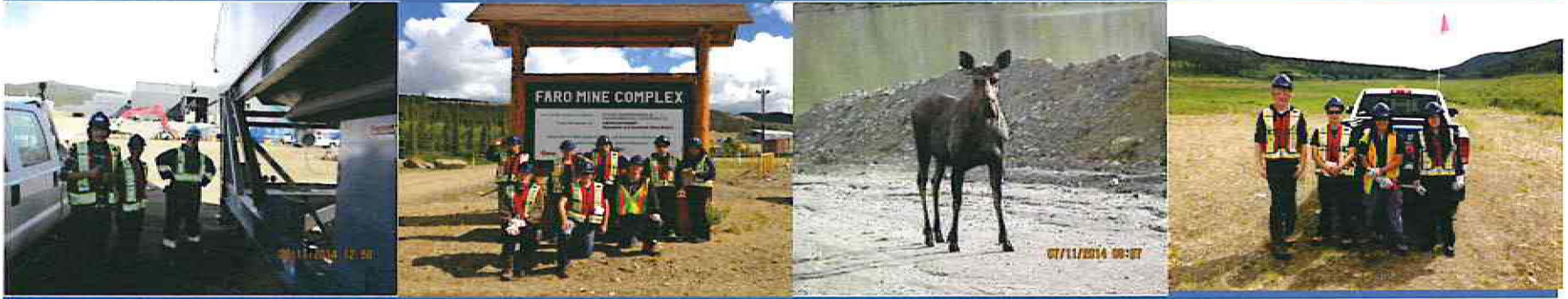
Summer Program

Agreement between YG, TEES and Yukon College was set up to provide classroom training for a summer Environmental Monitoring Program. The program was ultimately a pilot program which was very successful running for 8 weeks over June and July.

The AYFN coordinator working with the AYFN communities posted opportunities and candidate selection in May and June.

Seven different certificates were obtained through the Yukon College in different components of the program.

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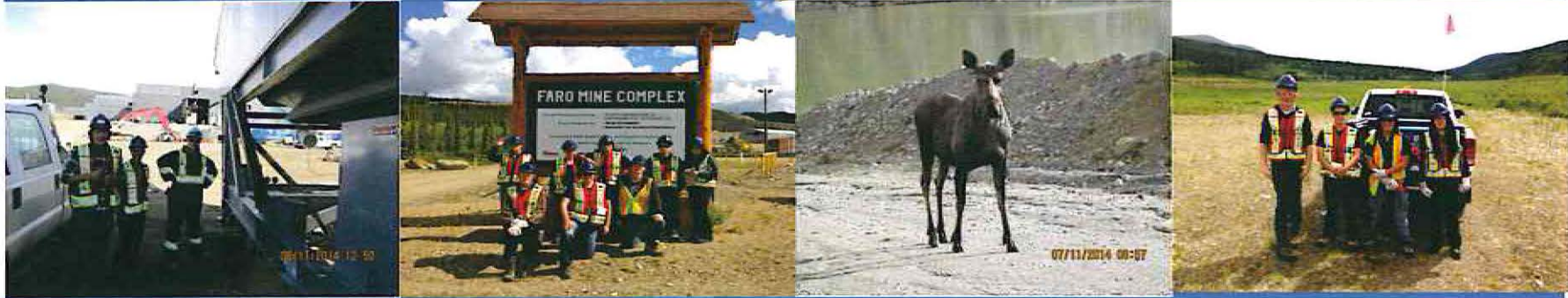


AYFN - Training and Participation

Summer Program

- The Environmental Monitoring Program began June 9 2014 and formally ended for most student on July 31, 2014.
- The program began with 9 students; 8 completed those included 2 LFN, 2 SFN, 2 RRDC, and 2 Faro students.
- 4 remained on site until August 29, 2014 working with the inventory department and other areas where needed.

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AYFN – Annual Statistics for 2014

	Total	Target	Min
Class Room/Training	825.5	18 hr –person	12.5%
Informal and Formal	33.60%	17.5%	12.5%
Direct Employment	11.11%	12.50%	12.5%

*F.3 2) Contracting/sub-contracting: is defined as the establishment of agreements and/or contracts for the provision of services, goods, and supplies required for the completion of the work under the Contract from Affected Yukon First Nations or Yukon Businesses.

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Future AYFN Opportunities

- **Heavy Equipment Mechanic**- TOS Jan 12/15, 4 months, RR Yukon College
- Tuition \$2000
- Training allowance and SA from RRDC
- **Health & Safety Training** - Northern Safety Network Yukon
- 3 individuals from each AYFN communities
- **Occupational First Aid, OFA** – Faro
- **Beyond Willpower** – 3 hour course,
 - How to make lasting lifestyle changes, making changes to improve health and well-being.
 - Covers science of what works when it comes to making lasting behavioral or lifestyle change.
 - Adds to personal goal and increase your chances of success.
- **Geological Technology** – 1 year certificate
 - “ **Technician** -- 2 year diploma
- **Drivers’ Training** – 8 weeks
- **Technician Diploma** – continuation of EM program leads to a diploma? Jeff
- **Heavy Equipment Operators training**, is there a demand for HEO



Closing Remarks

08/07/2014 16:02