Appendix A
Annual Compliance Report
Condition Requirements
Condition 3

2016 Rainy River Project Annual Report

newgold™ Rainy River Project

Project Name:

Rainy River Project

Proponent:

New Gold Inc.

Decision Statement Issued:

Jan 12th 2015

CEARIS Ref Number:

80007

Reporting Period:

2016

Condition 3:
Fish and Fish Habitat

Construction of the Rainy River Project required that two natural water courses be diverted in order to accommodate the construction of water treatment facilities for pit dewatering, the Mill and associated plant site infrastructure and the open pit. While no actual water course diversion took place in 2015 or 2016, construction of compensation ponds and earthworks associated with diversions did take place under approval from the Ministry of Natural Resources and Forestry (MNRF) and the Department of Fisheries and Oceans Canada (DFO). By the end of 2016, New Gold RRP had constructed four ponds and approximately ten kilometers of man-made creek channel that have incorporated appropriate fish habitat for the water flow and fish species within the project area.

In late November 2016, New Gold RRP began to commission the water systems. As part of the projects DFO authorization a five year Fisheries Monitoring Plan will be implemented to ensure that all habitat is functioning as designed and that fish have moved into these systems.

In October 2016 New Gold RRP conducted the RRP Fish Tissue Monitoring Program, with fish collection conducted from September 19th to 24th. Fish communities and catchability for walleye and northern pike were generally consistent with the results of previous sampling efforts.

The report found that the RRP has not had any influence on the concentrations of metals in muscle and liver tissues of the sentinel fish species. The 2016 report was finalized March 2017.

Installation of culverts on the project as well as planning for the advancement of the Open Pit in early 2017 required that fish salvage programs be conducted once again this year. Under various fisheries licenses issued by the MNRF, New Gold RRP retained professional services to assist in the relocation of approximately 16,976 fish (primarily minnow and small bodied species) from the West Creek and from the Pinewood River System at the Pumphouse intake. A total of 30 fish (15 Walleye and 15 Northern Pike) were captured for detailed study purposes.

Condition 3.1

The Proponent shall minimize changes caused by the Designated Project to water levels and water flows in the Pinewood River, the Minor Creek System, and the Modified Minor Creek System in such a way as to protect fish and fish habitat, by implementing mitigation measures including, but not limited to:

Status: Ongoing

Supporting Analysis:

Refer to supporting analysis 3.1.1 to 3.1.4

Condition 3.1.1

Recycling of water, for ore processing, from the tailings management area and ponds constructed for water management;

Status: Not applicable at this time

Supporting Analysis:

During the 2016 Construction Phase New Gold RRP did not complete the Water Management Facility or start construction on the Tailings Management Facility. As construction advances in 2017 these facilities will be implemented along with the Mill. At this time water will be recycled from the open pit and the tailings management pond to assist in the milling of ore. The mine infrastructure was designed in a way that encourages recycling water and reduces the need to draw water from natural sources therefore minimizing potential impacts on the Pinewood River and associated water systems.

Condition 3.1.2

Optimizing the timing, position and quantity of final effluent discharge between the final effluent discharge points;

Status: Ongoing

Supporting Analysis:

There have been no significant Project-related changes, as 2016 was a year of construction and changes to watershed areas/capture of watershed areas during the year were negligible. There were no significant effluent discharges from the site during 2016 related to ore processing and tailings.

During the planning and permitting stages of the project New Gold RRP has received a number of Permits to Take Water from the Ministry of Environment and Climate Change (MOECC) which regulate the volume of water the project is permitted to take and to discharge including effluent from temporary

sediment ponds. All discharge points have been obtained through the Environment Canada Metal Mining Effluent Notification Process. Condition 3.8.2 details the 2016 Effluent Quality and Table 1 below details the Field Discharge Points (FDP).

Condition 3.1.3

Filling the open pit during the decommissioning and abandonment phases in a manner which meets the flow requirements in the Pinewood River while allowing the pit to be filled as expeditiously as possible to reduce any adverse environmental effects

Status: Not applicable at this time

Supporting Analysis:

This condition will come into effect during pit closure planned for 2031.

Condition 3.1.4

Not taking water from the Pinewood River when flows are below the minimum threshold set by Ontario.

Status: Ongoing

Supporting Analysis:

During 2016 water was taken from the Pinewood River on five occasions to commission the pipeline. Water removal from the Pinewood River is permitted by the MOECC. In the spring of 2017 the Water Management Pond will be completed and taking water from the Pinewood River will occur when thresholds are appropriate.

Figure 1: Darters in West Creek, October 2016

Table 1: Field Discharge Points (FDP) Details

	FDP 1 / PRF 1	FDP 2 / PRF 2	FDP 3 / PRF 3	FDP 4 / PRF 4	FDP 5 / PRF 5	FDP 6 / PRF 6	FDP 7 / PRF 7	FDP 8 / PRF 8	FDP 9 / PRF 9
FDP full name	Preliminary Phase Mine Rock Pond	In Pit Sump 3	In Pit Sump 4	Sediment Pond 1	Process Plant Overburden Pile	Process Plant Site	Plant Site South Pond	Plant Site North Pond	Overburden and West Mine Rock Stockpile Temp Ponds
FDP short name	PPMRP	Sump 3	Sump 4	Sed Pond 1	MRP Stockpile	Temp Sed Pond	South Pond	North Pond	Sumps 1 & 2
Effluent Type (as defined in MMER)	Mine water effluent	mine water effluent	mine water effluent	treatment pond effluent	treatment pond effluent	treatment pond effluent	treatment pond effluent	treatment pond effluent	treatment pond effluent
FDP start deposit date (YYYY-MM-DD)	hasn't been constructed	12/7/2015	4/29/2016	hasn't been constructed	6/6/2016	9/17/2015	6/9/2016	7/20/2016	9/4/2016
FDP flow rate capacity (m3/day)	TBD	55,000	55,000	46,797	55,000	19,771	19,771	19,771	10,490
Location Latitude x Longitude (DD°MM'SS" N x DD°MM'SS" W)	48°49'42" x 94°00'01"	48°49'56" x 94°01'20"	48°49'53" x 94°00'38"	48°50'54" x 94°02'22"	48°49'47.3" x 93°59'35"	48°50'44.8" x 93°59'59.8"	48°50'30.5" x 94°00'14.7"	48°51'00" x 94°00'12.3"	48°49'45" x 94°02'11"
FDP description	temporary treatment pond for runoff	temporary mine water treatment	temporary mine water treatment	treatment for runoff	temporary treatment for runoff	temporary treatment for runoff	treatment for runoff	treatment for runoff	treatment for runoff

	FDP 1 / PRF 1	FDP 2 / PRF 2	FDP 3 / PRF 3	FDP 4 / PRF 4	FDP 5 / PRF 5	FDP 6 / PRF 6	FDP 7 / PRF 7	FDP 8 / PRF 8	FDP 9 / PRF 9
Name of Receiving Environment	Pinewood River	Pinewood River	Pinewood River	Pinewood River	Clark Creek	West Creek	West Creek	West Creek	Pinewood River
Reference Area(s)	for FDP 1 / pour PRF 1	for FDP 2 / pour PRF 2	for FDP 3 / pour PRF 3	for FDP 4 / pour PRF 4	for FDP 5 / pour PRF 5	for FDP 6 / pour PRF 6	for FDP 7 / pour PRF 7	for FDP 8 / pour PRF 8	for FDP 9 / pour PRF 9
Reference Area Full Name	Pinewood River	Pinewood River	Pinewood River	Pinewood River	Pinewood River	Pinewood River	Pinewood River	Pinewood River	Pinewood River
Location Latitude x Longitude (DD°MM'SS" N x DD°MM'SS" W)	48°49'06.1" x 93°56'24.4"	48°49'06.1" x 93°56'24.4"	48°49'06.1" x 93°56'24.4"	48°49'06.1" x 93°56'24.4"	48°49'06.1" x 93°56'24.4"	48°49'06.1" x 93°56'24.4"	48°49'06.1" x 93°56'24.4"	48°49'06.1" x 93°56'24.4"	48°49'06.1" x 93°56'24.4"
Description	Upstream of project location	Upstream of project location	Upstream of project location	Upstream of project location	Upstream of project location	Upstream of project location	Upstream of project location	Upstream of project location	Upstream of project location
Exposure Area(s)	for FDP 1 / pour PRF 1	for FDP 2 / pour PRF 2	for FDP 3 / pour PRF 3	for FDP 4 / pour PRF 4	for FDP 5 / pour PRF 5	for FDP 6 / pour PRF 6	for FDP 7 / pour PRF 7	for FDP 8 / pour PRF 8	for FDP 9 / pour PRF 9
Exposure Area Full Name	Clark Creek	Pinewood River	Pinewood River	Pinewood River	Clark Creek	West Creek	West Creek	West Creek	Pinewood River
Location Latitude x Longitude (DD°MM'SS" N x DD°MM'SS" W)	48°49'39" x 94°00'29.7"	48°49'41.9" x 94°02'45.6"	48°49'37.8" x 94°00'49.5"	48°49'41.66" x 94°02'20.87"	48°49'39.8" x 94°00'02"	48°50'24.9" x 94°01'05"	48°50'24.9" x 94°01'05.5"	48°50'55.18" x 94°00'22.4"	48°49'43" x 94°02'19"
Description	Diversion channel at old Hwy 600	South of open pit	South of open pit	South west of property location	Diversion channel at old Hwy 600	North of open pit	North of open pit	North of open pit	South west of open pit

Condition 3.1.3

Filling the open pit during the decommissioning and abandonment phases in a manner which meets the flow requirements in the Pinewood River while allowing the pit to be filled as expeditiously as possible to reduce any adverse environmental effects

Status: Not applicable at this time

Supporting Analysis:

This condition will come into effect during pit closure planned for 2031.

**As also indicated on Page 3 of Appendix A Condition 3*

Condition 3.1.4

Not taking water from the Pinewood River when flows are below the minimum threshold set by Ontario.

Status: Ongoing

Supporting Analysis:

During 2016 water was taken from the Pinewood River on five occasions to commission the pipeline. Water removal from the Pinewood River is permitted by the MOECC. In the spring of 2017 the Water Management Pond will be completed and taking water from the Pinewood River will occur when thresholds are appropriate.

**As also indicated on Page 3 of Appendix A Condition 3*

Condition 3.2

The Proponent shall, for all effluent, comply with the Metal Mining Effluent Regulations, the Fisheries Act and any site-specific water quality requirements set by Ontario. To ensure compliance, the Proponent shall implement, at a minimum, the following mitigation measures:

Status: Ongoing

Supporting Analysis:

Refer to supporting analysis 3.2.1 to 3.2.5

Condition 3.2.1

Treat effluent prior to discharge to the environment;

Status: Ongoing

Supporting Analysis:

Currently effluent discharges to the environment are from temporary seepage collection systems and pit dewatering systems that have been constructed in 2015 and 2016. Effluent is generated from storm water runoff and contact water associated with blasting bedrock for the development of infrastructure foundations and Open Pit.

Treatment consists of flocculent addition to reduce total suspended solids and dry ice to reduce un-ionized ammonia levels. An example of the documentation used to record water treatment prior to discharge is shown in SD 3.2.1a. In October 2016 New Gold RRP purchased and installed a portable water treatment plant (BakerCorp 10K Vessel Unit) which is used to reduce ammonia concentrations during Open Pit dewatering. The Notice of Modification and letter of approval is shown in SD 3.2.1b.

Water quality objectives and sampling requirements for the Rainy River Project are outlined in the MMER and the MOECC Environmental Compliance Approvals for Construction and Operations.

Condition 3.2.2

Treat tailings slurry to break down cyanide and precipitate heavy metals;

Status: Not applicable at this time

Supporting Analysis:

In 2016 there was no mill processing that would generate tailings. In 2017 tailings will be generated and treated in accordance with the Metal Mining Effluent Regulation and the Environmental Compliance Approval for the Rainy River Project.

Condition 3.2.3

Collect site contact water and seepage in ditches and divert to either the tailings management area or water management facilities for release via final discharge points;

Status: Ongoing

Supporting Analysis:

Site contact water generated from blasting and construction activities is collected in a temporary water management facility on the Plant Site and Open pit where it is treated, sampled and discharged in accordance with approvals and legislation from Environment Canada, Department of Fisheries and Oceans and the Ministry of Environment and Climate Change. During 2017 the Water Management Pond (WMP), Tailings Management Area (TMA), tailings pipeline and Mine Rock Pond will be

constructed. These features will be designed to have seepage collection systems or drainage ditches and water from these collection systems will be either put back into the TMA or the water will first be recycled in mill processing prior to discharge into the TMA.

Figure 2: Plant Site Polishing Pond southeast corner looking north, November 2016

Figure 3: Plant Site Sediment Pond west edge looking east, November 2016

Figure 4: Plant Site South Pond southwest corner looking north, November 2016

Figure 5: Plant Site South Pond northwest corner looking southeast, November 2016

Condition 3.2.4

Install and operate a water quality control structure in the constructed wetland to prevent the release of final effluent discharge not compliant with the Regulations or requirements; and

Status: Not applicable at this time

Supporting Analysis:

Construction of the constructed wetland is scheduled for 2017 and will include a water quality control structure.

Condition 3.2.5

Install secondary containment on pipelines that cross the West Creek Diversion Channel to prevent accidental discharge of effluent.

Status: Ongoing

Supporting Analysis:

Pipeline installation commenced in the fall of 2016 and New Gold RRP has made a design modification to not only install secondary containment on pipelines that cross the West Creek Diversion Channel but also where the pipeline crosses West Creek. Currently the work is underway with completion in early 2017 and consists of sleeves made from 36" high density polyethylene (HDPE).

Condition 3.3

The Proponent shall control acid rock drainage and metal leaching so that all effluent and passive outflow from the Project Site comply with the Metal Mining Effluent Regulations, any site-specific water quality requirements set by Ontario, and the Fisheries Act, as applicable at any time. To ensure compliance, the Proponent shall implement, at a minimum, the following mitigation measures:

Status: Ongoing

Supporting Analysis:

Refer to supporting analysis 3.3.1 to 3.3.8

Condition 3.3.1

Line the former Clark Creek channel (under the east mine rock stockpile) with non-potentially acid generating material;

Status: Not applicable at this time

Supporting Analysis:

During 2016 the East Mine Rock Stockpile had not progressed to the former Clark Creek Channel. Imprinting over the former channel is scheduled for 2017 at which time the channel will be lined with nonacid generating rock.

Condition 3.3.2

Sort waste rock into potentially acid generating and non-potentially acid generating rock stockpiles through the development and implementation of a detailed mine rock segregation program using criteria for determining potentially acid generating material set by Ontario;

Status: Ongoing

Supporting Analysis:

Blasting and rock excavation from the Rainy River Open Pit Mine began in October 2015 and continued throughout 2016. Construction activities and infrastructure development require and consume all the Non-acid Generating (NAG) waste rock produced and therefore no stockpile for NAG rock was started in 2016. PAG Rock has been avoided for the most part.

Where PAG has been encountered it has been used in the Mine for building ramps, haul roads and platforms for the production shovels working in overburden material. Some PAG has also been placed on the upstream side of the TMA where it will remain below the water table.

Representative samples are taken from each production drill hole and analyzed in order to sort waste rock into NAG and PAG categories. Analyses is completed prior to the removal of blasted material. Additional testing and evaluation of the waste rock program was started in 2016 under the recommendations of geo-scientists and a thorough review by New Gold's Independent Tailings Review Board (ITRB).

The RRP has now tested and evaluated over 20,000 rock samples to strengthen the waste rock program. RRP continues to manage waste rock categorization on a 2 NPR threshold, instead of the 1.65 NPR threshold submitted for permitting to add an extra level of safety until the metal leaching and acid generating potential of the rock could be well understood. Work is continuing to be done to improve our understanding of the Waste Rock. All material leaving the open pit has placement data associated with it as per regulations.

Condition 3.3.3

Design and construct the perimeter ditching around the east mine rock stockpile and low grade ore stockpile to accommodate a 100-year flood event;

Status: Ongoing

Supporting Analysis:

During 2015 and 2016 a minimal amount of overburden removed from construction of foundations on the plant site was placed in the west portion of the east mine rock stockpile and temporary perimeter ditching and settling pond were constructed to capture runoff. All water is treated in accordance with the Construction Environmental Compliance Approval issued by Ministry of Environment and Climate Change as well as regulations under the Metal Mining Effluent Regulation. Water is discharged to an approved Environment Canada discharge location which drains into Clark Creek.

As the project advances in 2017 most waste rock will continue to be sent to the TMA. When rock is no longer required for the construction of the dams, development of the East Mine Rock Stockpile will start.

In 2017 the Mine Rock Pond will be built and will be in place prior to the expansion of the East Mine Rock Stockpile. In 2017 the temporary drainage collection system will need to be upgraded to accommodate a 100-year flood event.

Condition 3.3.4

Use potentially acid generating material only for the purpose of constructing the tailing management dam, where saturated conditions can be maintained. Potentially acid generating material must not be used for any other construction purpose;

Status: Ongoing

Supporting Analysis:

In late 2016, some PAG rock was placed on the upstream side of the Tailings Management Pond. All waste rock has been characterized for its NAG and PAG characteristics and its placement during construction has been documented.

Condition 3.3.5

Place an engineered cover over the east mine rock stockpile and any remaining ore stockpiles at or before the decommissioning phase. The cover should be designed to prevent infiltration of water and to limit infiltration of air during the decommissioning and abandonment phases;

Status: Not applicable at this time

Supporting Analysis:

Work to be completed in accordance with this condition at mine closure

Condition 3.3.6

Cover the tailings with water and maintain the tailings in a perpetually saturated state during the decommissioning and abandonment phases;

Status: Not applicable at this time

Supporting Analysis:

This condition is not relevant to this phase of the project and will be implemented at mine closure.

Condition 3.3.7

Fill the open pit, in accordance with condition 3.1.3 and 3.1.4, as rapidly as practicable during the decommissioning and abandonment phases, using all available means, including directing drainage from the east mine rock stockpile into the pit; and

Status: Not applicable at this time

Supporting Analysis:

This condition is not relevant to this phase of the project. Open pit decommissioning is currently planned for 2031.

Condition 3.3.8

Control water quality in the open pit lake during the abandonment phase.

Status: Not applicable at this time

Supporting Analysis:

This condition is not relevant to the construction phase and will be implemented during open pit decommissioning.

Condition 3.4

The Proponent shall design and construct new road watercourse crossings for the realignment of Highway 600 to allow for fish passage in accordance with the Environmental Guide for Fish and Fish Habitat.

Status: Completed

Supporting Analysis:

During the realignment of Highway 600 there was one water crossing required in a fish bearing watercourse located at the Pinewood River. In the Fall of 2015 a clear span bridge was installed over the Pinewood River. There was no in water work required for the installation therefore no alterations to the original river channel that would impact or alter fish habitat or passage.

Condition 3.5

The Proponent shall design and construct new road watercourse crossings for the realignment of Highway 600 to meet the Highway Drainage Design Standards of the Ministry of Transportation of Ontario.

Status: Completed

Supporting Analysis:

During the design phase of the Highway 600 realignment routine meetings were held between New Gold Inc. (formally Rainy River Resources) and the Ministry of Transportation of Ontario (MTO). The road and its associated crossings have been designed and constructed to meet MTO standards and was completed under the MTO Construction Administration and Inspection Task Manual (CAITM) protocol. Highway 600 was turned over to the MTO in 2016.

Condition 3.6

The Proponent shall design and construct water intakes meeting standards set out in the Freshwater Intake End-of-Pipe Fish Screen Guideline of the Department of Fisheries and Oceans Canada (DFO).

Status: Ongoing

Supporting Analysis:

In March of 2016 the Pinewood River Pumphouse and Intake were completed. This facility provides water to the Water Management Pond to utilize in mill processing in the event that there is not enough fresh water in the sites recycling process.

The pump intake enters the Pinewood River and is isolated by chain link fence that is installed below the high-water mark of the Pinewood River shown in Figure 6.

In order to meet DFO guidelines and continue to allow successful suction of water a fish screen was installed over the chain link fence running from the base of the Pinewood River to above the high water mark shown in Figure 7.

Due to low water flow in the Pinewood River commissioning the pumps was delayed until late summer at which time a fish salvage was completed to ensure that no fish had been trapped between the screen and the

Figure 6: Pinewood River where river flows into intake, August 2016

pipe intake. Following a 24-hour trap set less than 20 minnows were caught and visual observations indicated no schools of minnows.

During periods of low flow, the screen will be periodically monitored to ensure that it remains secure and free of debris.

Figure 7: Pinewood River Intake showing fish screen, August 2016

Condition 3.7

The Proponent shall both offset any residual serious harm to fish in accordance with subsection 35(2) of the Fisheries Act and associated regulations, and compensate for the loss of fish habitat resulting from the deposition of a deleterious substance into a tailings impoundment area in accordance with the Metal Mining Effluent Regulations, by recreating fish habitat in the West Creek Diversion Channel, West Creek Pond, Stockpile Pond Diversion Channel, Stockpile Pond, Clark Creek Diversion Channel, Clark Creek Pond, and Teeple Road Pond.

Status: Ongoing

Supporting Analysis:

Fish habitat compensation was designed by qualified experts and was reviewed by the Ministry of Natural Resources and Forestry and the Department of Fisheries and Oceans Canada (DFO) during the permit approval phase. In 2015 all structures excluding the Clark Creek Pond and Teeple Pond were excavated and some of the features were constructed.

Work continued in 2016 which included the successful commissioning of the Clark and Teeple Pond diversions in November. It is New Golds intent to have all ponds and diversions commissioned by the Spring of 2017 pending approvals from MNRF and the company will proceed with implementing a five year monitoring plan to assess fish habitat and fish reintroduction as required in the authorization obtained from DFO.

The Fish Habitat Compensation Structures on the RRP include water control dams, ponds and diversions. Table 2 details the status of the Fish Habitat Compensation Structures.

Table 2: Status Update on Fish Habitat Compensation Structures

Structure	Construction Status	New Gold RRP Commissioning Date	Government Approval Status
Stockpile Pond Dam	90% Complete	Spring 2017	Pending MNRF Permit approval
Stockpile Pond	Complete	Spring 2017	Pending MNRF Permit approval
Stockpile Diversion	Complete	December 2016	Pending MNRF Construction Review
West Creek Dam	90% Complete	Spring 2017	Pending MNRF Permit approval
West Creek Pond	Complete	Spring 2017	Pending MNRF Permit approval
West Creek Diversion	90% Complete	Spring 2017	Pending MNRF Permit approval
Clark Pond Dam	Complete	Spring 2017	Pending MNRF Permit approval
Clark Creek Pond	Complete	Spring 2017	Pending MNRF Permit approval
Clark Creek Diversion	Complete	November 2016	Pending MNRF Construction Review
Teeple Road Dam	Complete	Spring 2017	Pending MNRF Construction Review
Teeple Road Pond	Complete	Spring 2017	Pending MNRF Construction Review
Teeple Road Diversion	Complete	November 2016	Pending MNRF Construction Review

Condition 3.8

The Proponent shall monitor water quality and quantity, and fish and fish habitat, to determine the effectiveness of the mitigation measures under conditions 3.1, 3.2, 3.3 and 3.7. In doing so, the Proponent shall monitor, at a minimum:

Status: Ongoing

Supporting Analysis:

Refer to supporting analysis 3.8.1 to 3.8.6

Condition 3.8.1

Water levels and flows, with respect to minimum flow thresholds for the Pinewood River set by Ontario, during periods of water taking as authorized pursuant to the Ontario Water Resources Act;

Status: Ongoing

Supporting Analysis:

During 2015 a Flow Monitoring Station was installed in the Pinewood River to track elevations and flow rates of water in the Pinewood River System. A Flow Monitoring Station belonging to the Ministry of Environment and Climate Change (MOECC) is also located downstream of the project on the Pinewood River. New Gold is able to access this data. During 2015 no water was taken directly from the Pinewood River, however in 2016 commissioning of the Pinewood River Pumphouse will occur and water will be drawn from the river based on data collected from the station to ensure operation in accordance with the projects Permit to Take Water issued by MOECC on August 31, 2015.

Furthermore, the project has 5 additional Permits to Take Water for the Open Pit, Tailings Management Facility, Construction Workings and Aggregate. All water takings are monitored using calibrated flow meters and data obtained from these takings is submitted annually via the MOECC online reporting protocol. Water taking data is recorded in accordance with the New Gold Site Procedure for Tracking Water Related to PTTW and ECA developed on July 12, 2015. The procedure has been attached as SD 3.8.1a).

This monitoring will be required for the life of the mine. Under PTTW #8776-9W2QN2 Industrial Water Supply for the Pinewood River New Gold was required to develop and submit to MOECC a Biological Monitoring Plan that addresses methods for monitoring and identifying fish kills and fish stranding and a contingency plan to address adverse effects. This monitoring plan will be finalized for submission in early 2016 and will commence in 2016 following the installation and commissioning of the Pumphouse.

Figure 9: Pinewood River Pumphouse Entry, November 2016

Figure 8: Pinewood River Pumphouse Pipe System, November 2016

Condition 3.8.2

Effluent quality as per the requirements set out in the Metal Mining Effluent Regulations;

Status: Ongoing

Supporting Analysis:

During 2016 effluent discharges to the environment as defined by the Metal Mining Effluent Regulation (MMER) were related to temporary seepage collection systems and pit dewatering systems that have been constructed in 2015 and 2016. Effluent was generated from storm water runoff and contact water associated with blasting bedrock for the development of infrastructure foundations and open pit development.

Treatment consists of flocculent addition to reduce total suspended solids and dry ice to reduce un-ionized ammonia levels. In October 2016 New Gold acquired and installed a portable water treatment plant (BakerCorp 10K Vessel Unit) which is used to reduce ammonia concentrations during Open Pit dewatering. All water was treated and tested in accordance with applicable permits and legislation from Environment Canada (EC), Ministry of Environment and Climate Change (MOECC) and Fisheries and Oceans Canada (DFO).

During the 2016 construction and pit development period there were 75 effluent discharges from construction and pit dewatering sediment ponds designed to capture contact water and provide adequate treatment for Total Suspended Solids (TSS) and Un-ionized Ammonia prior to discharge to the environment.

Figure 10: Sampling Plant Site Polishing Pond, May 2016

These discharges occurred between January and December. All discharge water met the water quality objectives outlined in the Environment Canada Metal Mining Effluent Regulation (MMER) and the Ministry of Environment and Climate Change (MOECC) Construction Environmental Compliance Approval, with the exception of the following:

- A total suspended solids exceedance from In Pit Sump 3 on April 15, 2016. Further information can be found in SD 3.8.2b.
- A total suspended solids exceedance from the Plant Site Temporary Sediment Ponds (Polishing Pond) on April 27, 2016. Further information can be found in SD 3.8.2c.
- An un-ionized ammonia exceedance from In Pit Sump 3 on May 9, 2016. Further information can be found in SD 3.8.2d.
- An un-ionized ammonia exceedance in Pit Sump 4 on May 30, 2016.
- A total suspended solids exceedance from South Runoff Pond on June 30, 2016. Further information can be found in SD 3.8.2e.
- An un-ionized ammonia exceedance from In Pit Sump 4 on June 30, 2016. Further information can be found in SD 3.8.2f.
- A sediment release with TSS exceedance from Loslo Creek on July 18, 2016 SAC Reference 8428-AB-PHUR in SD 3.8.2g.
- An un-ionized ammonia exceedance from In Pit Sump 4 on July 20, 2016. Further information can be found in SD 3.8.2h.
- An un-ionized ammonia exceedance and a total suspended solids release from In Pit Sump 3 on July 27, 2016. Further information can be found in SD 3.8.2i.
- A total suspended solids exceedance from Overburden/West Mine Rock Stockpile Temporary Sediment Pond 2 on October 8, 2016. Further information can be found in SD 3.8.2j.
- A total suspended solids exceedance from Plant Site Temporary Sediment Ponds (Polishing Pond) on November 23, 2016. Further information can be found in SD 3.8.2k.
- An acute lethality exceedance from In Pit Sump 4 on December 28 to 30, 2016. Further information can be found in SD 3.8.2l, SD 3.8.2m, and SD 3.8.2n.

Figure 11: Field Filtering Samples, May 2016

Additional information related to all 75 of the discharges including water quality results and discharge locations can be found in SD 3.8.2a.

In 2017 tailings from ore reclaiming will be treated in the Tailings Management Facility. Water quality objectives and sampling requirements for the Rainy River Project are outlined in the MMER and the MOECC Environmental Compliance Approvals for Construction and Operations.

Further information and results related to surface water sampling and effluent sampling, treatment and discharge can be found in SD 3.8.2o.

Condition 3.8.3

The effectiveness of recreated fish habitat. The monitoring shall be designed in accordance with any authorizations pursuant to subsection 35(2) of the Fisheries Act and associated regulations and/or the Metal Mining Effluent Regulations;

Status: Ongoing

Supporting Analysis:

Fish habitat compensation was designed by qualified experts and was reviewed by the Ministry of Natural Resources and Forestry and the Department of Fisheries and Oceans Canada (DFO) during the permit approval phase.

On the project site New Gold RRP has recreated four new ponds that will act as refuge areas for fish during the winter season. These ponds have been sized accordingly to handle hydraulic flow. Each of the ponds contains a water control dam to hold water in the pond and force the water into diversion channels that connect between the systems. The ponds are designed with several deep pools that will act as over wintering pools for minnows. During the warmer seasons fish will thrive by seeking shelter and shade amongst the anchored tree clusters and rock boulder structures that have been installed.

In the diversion systems the design team recreated channels stabilized with biodegradable erosion blankets, native seed and native shrubs. All diversion channels have low flow channels excavated in the center, a sequence of rock riffles, and pools which will slow water velocity and allow refuge areas for fish. Amongst the riffle and pool sequences are rock boulder clusters that will provide shade and protection.

In April 2016 New Gold RRP was pleased to have the opportunity to tour a representative from DFO around the project site to assess the quality of the design and the constructed works. There were several positive comments received as well as some excellent guidance regarding stabilization and fish passage in culverts which New Gold proceeded to implement during the summer.

As 2016 concluded, New Gold RRP completed construction reports of the fish habitat features to be presented to the MNRF and DFO as part of regulatory reporting in the early part of 2017, for further review and evaluation.

Condition 3.8.4

The effectiveness of the potentially acid generating and non-potentially acid generating rock segregation program through ongoing geochemical verification of the waste rock during any period that waste rock is generated;

Status: Ongoing

Supporting Analysis:

Throughout 2016, over 20,000 waste rock samples were tested and categorized. The results have significantly improved our understanding of waste rock categorization. The increased sampling has confirmed that the categorization of waste rock has been effective. The program is being evaluated on an ongoing basis.

Condition 3.8.5

Water quality in the open pit, pursuant to any requirements set by Ontario in the Mine Closure Plan for the Designated Project; and

Status: Not applicable at this time

Supporting Analysis:

This condition is currently not relevant as the project is in its construction phase.

Condition 3.8.6

The maintenance of a perpetually saturated state of the tailings, for 25 years from the start of the decommissioning phase of the Designated Project.

Status: Not applicable at this time

Supporting Analysis:

This condition is currently not relevant as the project is in its construction phase.

Figures

Tables

Supporting Documentation

SD 3.2.1a: Water Discharge Form Example
SD 3.2.1b: BakerCorp Notice of Modification
SD 3.8.1a: ENV-PRD-002-15 Site Procedure for Tracking Water Related to PTTW and ECA
SD 3.8.2a: 2016 Effluent Quality
SD 3.8.2b: 2016.04.15 Sump 3 ECA Sediment Release
SD 3.8.2c: 2016.04.27 PPSP Report
SD 3.8.2d: 2016.05.09 Sumps 3&4 ECA Un-ionized Ammonia Release
SD 3.8.2e: 2016.06.30 South Pond ECA Sediment Release
SD 3.8.2f: 2016.06.30 Sump 4 ECA Un-Ionized Ammonia Release
SD 3.8.2g: 2016.06.18 Loslo Creek TSS Exceedance
SD 3.8.2h: 2016.07.20 Sump 4 ECA Un-Ionized Ammonia Release
SD 3.8.2i: 2016.07.27 SAC 5722-ACGJF8 Sump 3 ECA Un-ionized Ammonia and TSS Release
SD 3.8.2j: 2016.10.08 West Mine Rock Stockpile Sump 2 Exceedance
SD 3.8.2k: 2016.11.23 PSPP TSS Exceedance
SD 3.8.2l: 2017.01.06 SAC 7425-AHBTWL Sump 4 Acute Tox
SD 3.8.2m: 2017.01.20 SAC 7425-AHBTWL Sump 4 Acute Tox Update
SD 3.8.2n: 2017.02.02 SAC 7425-AHBTWL Sump 4 Acute Tox
SD 3.8.2o: 2016 ECA Monthly Reports

Sigfusson Northern

Water Discharge Release Form

Date: NOV, 18th/16 (treatment)

Time: 10:50 am (treatment)
12:00 pm (treatment)

Location: Sump 3

I Garnet Cornell 21-Nov-16 discharge *(please print) hereby authorize the discharge of water*

from above location into the environment as the water quality tests have been approved.

Treatment added: Dry-ice

Amount: 30,000lbs
22 Tub's

	Nick Sederquest
Approval Signature	*Sigfusson Representative*
	Sigfusson Rep. Signature

newgold™ Rainy River Project

October 31, 2016

Mr. Ray Boivin
Ministry of the Environment and Climate Change
Kenora Area Office
808 Robertson Street,
Kenora, ON P9N 1X9

Dear Ray

RE; NOTICE OF MODIFICATION TO SEWAGE WORKS RAINY RIVER PROJECT ECA NO. 5781-9VJQ2J – INSTALLATION OF TEMPORARY AMMONIA TREATMENT FACILITY

As the New Gold Rainy River Project (RRP) advances through the construction phase and Open Pit mine development, the project has been challenged with treating ammonia levels in four temporary treatment sumps in or near the open pit. Currently the project uses CO_2 (dry-ice) treatment to reduce un-ionized ammonia. This method of treatment has caused issues with water quality from the sumps as previously communicated with the Ministry of Environment and Climate Change (MOECC), the Canadian Environmental Assessment Agency (CEAA), and the Spills Action Center. In August 2016 the RRP engaged in discussions with MOECC regarding the challenges of treating ammonia within these temporary systems. Under request by the MOECC, the RRP committed to obtaining an alternate treatment source. At this time the RRP has purchased and plans to install a portable filter system (the system) from BakerCorp. The unit has been purchased and is planned to arrive to the RRP the week of October 31, 2016. BakerCorp has indicated that the system will take two weeks to install and ensure proper function.

The system will be used to remove ammonia from the water being pumped out of the Open Pit. The water will be pumped into the system, where Sumps 1, 2, 3, and 4 will be used as storage for various stages. The system consists of two separate devices; the 8" 304 Stainless Steel 12-Bag Filter System and the D-Kleen Water 10K Vessel Filter System. The 12-Bag filter system will reduce total suspended solids. D-Kleen Water 10K Vessel Filter System (with the appropriate media) will remove total ammonia.

The system will be constructed to allow for Open Pit water to run directly into the treatment and allow discharge to a sump. The system will operate in Series Mode where unfiltered water is first passed through one unit then flows into the second unit and discharged to the opposite corner of a sump. In this mode, the primary unit will require backwashing then returned to service as a polisher. The secondary polishing unit is alternated as the primary unit until requiring backwash. This is the most efficient operating mode for the equipment.

Treated water will only be discharged from sumps once water quality has met standards in the ECA and Metal Mining Effluent Regulations (CEAA). A detailed description of the modification is attached which includes a sketch outlining the current operation of the system and the proposed modification and detailed drawings of the system itself.

Zeolite will be used as the filter media in the system. The MDS is attached. The used zeolite will be removed and disposed of within the overburden stockpile located South of the Plant Site. This stockpile drains to the two sediment ponds within the ultimate footprint of the Mine Rock Pond.

The zeolite is inert, however the used zeolite is loaded with ammonia. The two sediment ponds and the Mine Rock Pond are intended to collect drainage from the East Mine Rock Stockpile that will contain ammonia blasting residuals. The collection of any residual ammonia drainage from the used zeolite (likely negligible) should be consistent with existing permits. Once the Mine Rock Pond is fully constructed it will be the runoff treatment facility for the East Mine Rock Stockpile.

In addition to the removal of ammonia using zeolite, dry-ice treatment may still be used to reduce the un-ionized ammonia content before discharge. Water quality from the system will be monitored daily until confirmation of function is confirmed.

At this time the RRP is requesting a modification to sewage works under ECA No. 5781-9VJQ2J. Once you have had the opportunity to review this information if you have any further questions or comments please contact the undersigned or Darrell Martindale, New Gold Environmental Manager (Darrell.martindale@newgold.com)

Thank you,

Garnet Cornell
Environmental Technician
New Gold Rainy River Project
(807) 482-0931
Garnet.Cornell@newgold.com

CC; Darrell Martindale (New Gold), Canadian Environmental Assessment Registry, Drew Stajkowski (MOECC Thunder Bay)

Attached:

- 1. Notice of Modification to Sewage Works Application
- 2. Sketch of Current Operation vs Proposed Operation
- 3. Bakercorp 10K Portable Filter System Instructions – Installation and Operation Manual
- 4. Bakercorp Portable 10K Filtration System Brochure
- 5. Bakercorp Technical Information Manual
- 6. Bakercorp MSDS for Natural Zeolite (Issued July 7, 2011)
- 7. Bakercorp Z-100 Filter Media Physical Properties Description

Ministry of the Environment and Climate Change
Northern Region
Kenora Area Office
808 Robertson Street
Kenora, ON P9N 1X9
Fax: (807) 468-2735
Telephone: (807) 468-2718

Ministère de l'Environnement et de l'Action en matière de changement climatique
Direction régionale du Nord
Bureau du secteur de Kenora
808 rue Robertson
Kenora, ON P9N 1X9
Télécopieur: (807) 468-2735
Téléphone: (807) 468-2718

Ontario

November 8, 2016

Mr. G. Cornell
Environmental Technician
New Gold Inc.
5967 Hwy 11/71, P. O. Box 5
Emo, Ontario
P0W 1E0

sent via e-mail only

Dear Mr. Cornell:

Re: Notice of Modification to Sewage Works per ECA 5781-9VJQ2J

Please consider this letter as written acceptance of the Notice of Modification to Sewage Works received by the Ministry of the Environment and Climate Change on October 31, 2016. The modification is the temporary installation of a portable ammonia treatment facility for the purpose of reducing un-ionized ammonia in construction phase effluents. Written acceptance is provided under the authority of condition 14(8) of Environmental Compliance Approval 5781-9VJQ2J.

Note that this written acceptance does not negate any of the conditions contained in Environmental Compliance Approval 5781-9VJQ2J. The approval remains fully in effect.

Please contact Senior Environmental Officer Ray Boivin at 807-468-2728 if you would like to discuss the contents of this letter or the requirements of Ontario's environmental legislation.

Yours truly,

Glen Niznowski
District Manager (A), Thunder Bay/Kenora

/RB

newgold Rainy River Project		ENV-PRCD-002 Site Procedure for Tracking Water Related to PTTW and ECA	
Author: Manager Environment Approved July 12	**Approver**: Construction Director Approved July 12	**Revision Number**: V1.0	**Creation Date**: July 12, 2015 **Date Last Modified**: July 12, 2015 **Review Frequency: 1 Year**

Purpose

The purpose of this procedure is to clarify requirements relating to the taking of water for any use and to support the implementation of environmental regulatory approvals aimed at protecting stream flow and water quality including the Pinewood River. Management of water takings and discharge is required by legislation to protect water resources and a flow threshold has been set for the Pinewood River which must be maintained.

Any pumping of water must be tracked consistent with regulatory approvals and while this procedure is intended to support the implementation of those approvals it is the responsibility of the organization doing the pumping to ensure regulatory approvals are followed.

This procedure applies to all surface and groundwater pumping on the Project site.

Regulatory Requirements

Applicable legislation and permit conditions must be followed. These include but are not limited to;

- PTTW 3638-9VTNRM, PTTW 1386-9VTP2H, PTTW2133-9VUPVZ and PTTW 0040-9VUL6B;
- Environmental Compliance Approval 5781-9VJQ2J
- Ontario Water Resources Act including O.Reg 387/04; and
- Management of water used for dust suppression and other industrial uses (RRP_Water Use Management_Ver1_(Jun022015)_toGov);

Consistent with relevant section of the permit, no water taken under the authority of a PTTW may be discharged directly to the natural environment without prior treatment in accordance with an OWRA, R.S.O. 1990, Section 53, Industrial Sewage Works Approval, with the exception of the following:

a) Water taken for dust suppression and other industrial uses, provided the plan for management of water for dust suppression and other industrial uses is followed; and with the exception of PTTW 3638-9VTNRM

b) Non-contact water from by-pass pumping when standard sediment and erosion control practices are used. Which water takings are bypass pumping are defined in Table 1 and Mapped in Figure 3.1 for PTTW2133-9VUPVZ.

For the ECA and consistent with section 7.5; surface water runoff or seepage must not be discharged directly to the natural environment, from worksites, but instead directed to the contact water management system for further treatment if the concentration of parameters exceeds those authorized for discharge [e.g., 15 mg/l TSS and 0.1 mg/l unionized ammonia (monthly average)], unless the water is taken for dust suppression, industrial use or during site preparation, or is discharged using standard sediment and erosion control practices.

All water taken or discharged must be recorded by an annually calibrated flow measuring device with an accuracy of plus or minus 15 percent of the actual flow.

Procedure;

Pumping of any water on site must follow this procedure. The only exceptions are for water used for domestic use, potable water and fire suppression. The procedure has the following required steps;

1. Request for pumping approval submitted to New Gold together with calibration records
    a. Determine if pumping is (Environmental Compliance Approval) ECA or Permit to Take Water (PTTW) related
    b. Provide Details of pumping plans and environmental controls
    c. Provide information for flow metering and associated calibration records
2. Track water taking/pumping
3. Limitations and restrictions on cumulative consumptive takings

Step 1: Request for pumping approval submitted to New Gold together with calibration records

Prior to ANY pumping of surface or ground water on site a request must be made through the contracts department and ultimately to the environmental department using the form included with this procedure (Pump/Flow Meter Site Authorization Form; Permit to Take Water). The purpose of the form is a onetime process to support communication of Permit requirements and provide New Gold with documentation regarding the proposed pumping including volume, rate, duration and the calibration records of flow measuring devices.

Step 1 must be completed prior to completion of pumping. In the event of an emergency this process can be bypassed with authorization of the Environment Manager or designate provided the information is still captured e.g., flow rates, volumes etc and provided after the event.

Step 1a: Determination of PTTW, ECA related pumping or pumping from groundwater

Step 1a is required to identify the approved permit and legislation allowing for the proposed pumping. The information determined in Step 1a is to be recorded on Part A of the form.

All approved water takings by a PTTW are listed in Table 1 and must follow the corresponding PTTW approval. If the required pumping is not listed in Table 1 then the pumping is related to an ECA and must follow the ECA approval particularly sections 7.5 and 9.6. However, water takings in Table 1 may also be subject to the ECA which are highlighted in blue in Table 1 and in this case both PTTW and ECA conditions apply.

Table 1 provides a summary of approved water takings consistent with the approved Permits To Take Water. There are 4 categories as colour coded in Table 1;

- To ECA approved water treatment
- Bypass with sediment and erosion control
- Bypass to enhanced sediment and erosion control (but not ECA)
- Consumptive taking

All PTTW related pumping fits into one of these categories. A description is to be provided of the pump e.g., for dewatering a work area associated with excavation water that will be pumped to a vegetative area with applicable sediment and erosion control.

If groundwater pumping is permitted through a PTTW a similar process must be followed as for PTTW approved takings for surface water. In the absence of a PTTW for groundwater pumping then water tracking is required consistent with surface water for PTTW takings to ensure 50 m^3/day is not exceeded.

Pumping of all other surface water is related to the ECA as approved under section 7.5 and must be done with standard sediment erosion control practices or taken for dust suppression/industrial uses. Standard sediment and erosion control practices include those listed in OPSS 805, or as identified in sediment and erosion control plans for the site and/or specific works e.g., any LRIA approvals. Takings for dust suppression must follow the Management of water used for dust suppression and other industrial uses plan (RRP_Water Use Management_Ver1_(Jun022015)_toGov).

There are 8 approved final treated water discharge locations based on the ECA which is excluded from this procedure. No discharge from these locations may occur without authorization from the New Gold site environmental department. Once these treatment works are completed all water related to those works must go through the treatment works.

Step 1b Provide Details of pumping plans and environmental controls

The details of pumping and environmental controls required depend on the type of pumping and the enabling permit. The information determined from step 1b is to be recorded in Part B of the form.

For a PTTW the source of water taking, discharge location and a maximum volume, rate and duration of pumping has been defined in the PTTW. Therefore this information is required to ensure awareness of the permit requirement. The permit approves a maximum for each of these data fields which cannot be exceeded. Table 1 lists the approved pumping limits, sources and discharge points which can be used to populate Part B of the form.

For ECA related pumping there are no limits on the volume, duration or rate of pumping however, standard sediment and erosion control measures must be applied as identified above, these measures are to be identified on the form.

For dust suppression reference must be made to conformance with the following plan: RRP_Water Use Management_Ver1_(Jun022015)_toGov including specific control measures as applicable.

Step 1c Provide information for flow metering and associated calibration records

To ensure pumping records and volumes are accurate measuring pumping is required for any pumping. The measuring of water pumping must conform to one or more of the following criteria;

1. a flow measuring device(s) to an accuracy of ± 15% of the actual flow rate. The flow measuring device shall be calibrated at least once per year over the range of flow going through the meter
2. water truck with certified volume and the number of loads, volume and rate of taking is recorded

3. other method as approved by New Gold through MOECC – this can be proposed to New Gold for New Gold submission to MOECC.

Therefore in Part C of the form the proposed method of flow metering and the associated calibration/certification method must be provided along with the supporting documentation e.g., calibration records. A method of unique identification of the flow meter must be provided such that this can be tracked during field inspections/audits. In the event of water for dust suppression this may be a tank identifier or water truck identifier.

Step 2: Track water taking/pumping

The tracking of water takings or discharge requires the following must be recorded for each day water is taken/discharged: date, volume of water, and the rate of water pumped/discharged as measured using the flow metering device as proposed in step 1c. This tracking must be completed by the person/organization responsible for the pumping.

In the event no water is pumped this needs to be recorded also as 'no takings/discharge' or equivalent. A separate record must be submitted for each source as determined in Table 1 for PTTW pumping, for each groundwater well or ECA discharge.

To support collation and submission of water tracking data to New Gold a form is provided with this procedure and available in excel format to track water taking.

Completion and submission of water taking data is the responsibility of the contractor/the organization responsible for operating the pumps. Tracking sheets must be emailed to rainyriver.enviro@newgold.com at least weekly and by 0700 on Wednesdays for the previous week. The submission must be in electronic (excel) format and not hand written notes.

A record of water taking must be maintained by the person/organization conducting the pumping on site and available for inspection. The environment department will compile the submissions for completion of annual reporting.

Step 3: Limitations and restrictions on cumulative consumptive takings

A limit of either 15 or 20 % of Pinewood River flows, depending on the time of year, has been established for consumptive water taking. Consumptive taking (indicated in green in Table 1) is considered the impoundment of water that would otherwise drain to the Pinewood River and excludes bypass pumping. Impoundment of water relates to the Water Management Pond, the Tailings Management Area and the Mine Rock Pond and not ponds related to fish habitat works.

The summer low flow in the Pinewood typically doesn't drop below 150 L/s, equivalent to a maximum taking of 1,950 m3/ day taking at 15 %. In the event pumping authorization is given for consumptive use through this procedure that may cumulatively exceeds this volume, or exceeds the maximum consumptive take from the Pinewood River at any time, pumping limitations put in place by the site environmental team.

Table 1; Summary of Permitted Water Takings			Maximum Water Taking		
PTTW Permit	**Source**	**Type of Taking**	**Litres/min**	**Litres/day**	**Duration**
3638-9VTNRM	Tait Quarry dug out pond	To wet pond	3270	4700000	365
1386-9VTP2H	Outcrop 3 Quarry	By pass pump and retain	910	1300000	365
1386-9VTP2H	Outcrop 4 Quarry		770	1100000	365
1386-9VTP2H	Roen Road Pit	By pass pump	3000	4300000	365
2133-9VUPVZ	Loslo Creek (C6)	By pass pump	13,792	19,860,000	90
2133-9VUPVZ	Loslo Creek Water discharge pond dam (WDPD)	To terminal constructed wetland sediment pond	14,200	20,448,000	90
2133-9VUPVZ	Loslo Creek (CWPD1)		14,961	21,544,000	90
2133-9VUPVZ	Loslo Creek (CWPD2)		15,074	21,706,000	90
2133-9VUPVZ	Loslo Creek (CWPD3)		15,525	22,355,000	90
2133-9VUPVZ	Loslo Creek (CWPD4)	By pass pump	17,765	22,581,000	90
2133-9VUPVZ	Marr Creek Temporary Sediment Pond Dam (TSPD)	To temporary west stockpile pond	4,790	6,897,000	90
2133-9VUPVZ	Marr Creek culvert (C5)	By pass pump	2,564	3,692,000	90
2133-9VUPVZ	Marr Creek culvert (C9)	By pass pump	3,790	5,457,000	90
2133-9VUPVZ	West Creek Stockpile Dam (SPD)	By pass to temporary SPD channel excavation	4,395	6,329,000	90
2133-9VUPVZ	West Creek Stockpile Diversion (SPDC)	By pass pump or to sediment pond 1	2,212	3,185,000	90
2133-9VUPVZ	West Creek Pond Dam (WCPD)	By pass pump	9,551	13,754,000	90
2133-9VUPVZ	West Creek Culvert (C1)	By pass pump	11,524	16,594,000	90
2133-9VUPVZ	West Creek Culvert (C2)	By pass pump	21,033	30,287,000	90
2133-9VUPVZ	West Creek Culvert (C3)	By pass pump	4,776	6,877,000	90
2133-9VUPVZ	West Creek Culvert (C4)	By pass pump	775	1,116,000	90
2133-9VUPVZ	West Creek Culvert (C7)	By pass pump	2,310	3,327,000	90
2133-9VUPVZ	Clark Creek Diversion (CCDC)	Bypass to teeple pond	5,396	7,770,000	90
2133-9VUPVZ	Clark Creek Teeple Pond Dam (TPD)	By pass pump	1,113	1,603,000	90
2133-9VUPVZ	Clark Creek Pond Dam (CCPD)	Bypass to teeple pond	5,396	7,770,000	90
2133-9VUPVZ	Clark Creek Mine Rock Pond Diversion Dam (MRPDD)		5,410	7,790,000	90
2133-9VUPVZ	Clark Creek Culvert (C8)	By pass pump	5,705	8,216,000	90
2133-9VUPVZ	Sediment Pond #1 (SP1) Plant site	By pass pump	32,498	46,797,000	180
2133-9VUPVZ	Sediment Pond #2 (SP2) Plant Site	By pass pump	7,285	10,490,000	90
2133-9VUPVZ	Plant site Sumps PS1, PS2 and PS3	To plant site sed pond 1	13,730	19,771,000	180
0040-9VUL6B	WMP Dam	To WMP excavated settling pond	19,050	22,854,000	365
0040-9VUL6B	Loslo Creek (TMA Construction)	Bypass of Loslo Creek, or to WMP	20,010	24,015,000	365
0040-9VUL6B	TMA West Dam	To WMP excavated settling pond	7,590	9,102,000	365
0040-9VUL6B	Loslo Creek (TMA South Dam)	Pump to construction diversion dam pond and then WMP	17,770	21,327,000	365
0040-9VUL6B	TMA North Dam	To WMP	3,420	4,100,000	365
0040-9VUL6B	WMP Control Outlet	To WMP	2,290	2,743,000	365
0040-9VUL6B	WMP Emergency Spillway	Pump to TMA construction diversion dam pond	310	376,000	365
0040-9VUL6B	TMA Emergency Spillway	Pump water to TMA basin	440	531,000	365
0040-9VUL6B	Borrow Area A (WMP)	To WMP excavated settling pond	7,210	8,650,000	365
0040-9VUL6B	Borrow Area B (TMA)	To WMP	12,670	15,204,000	365

Pump/Flow Meter Site Authorization Form; Permit to Take Water

Part A; Purpose for pumping – indicate those that apply					
☐ PTTW taking	☐ ECA pumping		☐ Other:		
PTTW to ECA approved water treatment			PTTW Bypass with enhanced protection measures		
PTTW bypass with sediment and erosion control			PTTW Consumptive Taking		
ECA pumping (section 7.5 of ECA approval)			Other		
Description of pumping purpose					

Part B; Details of Pumping			
PTTW/ECA Permit Number			
Estimate daily volume (litres/day) (PTTW only)		Estimated rate (l/min) (PTTW only)	
Maximum pumping capacity (litres/min) (PTTW only)			
Proposed duration (number of days water will be taken)			
Source(s) (for PTTW see Table 1)			
Discharge location (see table 1 for PTTW)			
Discharge location sediment and erosion controls			

Part C; Flow Metering and Calibration Information	
Proposed flow rate and volume measuring method	
Calibration Record Details (attach record)	
Calibration date	
Unique identifier of flow meter	

Part D; Approvals	Name	Signature
Contractor / Requestor		
Area Manager		
Environmental Manager		
Assigned Approval ID		

Rainy River Project Water Taking and Discharge Record Form	**DATE**
Contractor:	**Flow measuring device/truck ID:**
Person Reporting:	**Permit #:**
Source of taking and description;	
Discharge Location:	

PTTW to ECA approved water treatment		PTTW Bypass with enhanced protection measures	
PTTW bypass with sediment and erosion control		PTTW consumptive Taking	
ECA pumping (section 7.5 of ECA approval)		Other (specify);	

Day of month	For flow pumping			For water truck dust suppression				All
	Pump flow rate	Duration		Size of truck	Duration to fill truck	Number of loads		Daily Total
	L/min	minutes		Litres	minutes	n		Litres
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
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16								
17								
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29								
30								
31								

	ALL TAKINGS TO BE REPORTING IN LITRES PER MINUTE; 1 US gallon = 3.785 litres
	RECORD MUST BE MADE DAILY; IF NO TAKINGS OCCUR - WRITE 'NO TAKINGS'
	SEPARATE FORM FOR EACH WATER SOURCE OR POINT OF TAKING
	NOTIFY NEW GOLD IMMEDIATELY IF ANY COMPLAINTS ARE RECEIVED FOR WATER TAKING
	SEND REPORT AT LEAST WEEKLY BY 0700 WEDNESDAY To: RainyRiver.Enviro@newgold.com

420000 422500 425000 427500 430000

5412500

5410000

SUMP
SUMP
SUMP
SUMP
WATER TREATMENT PLANT
WATER MANAGEMENT POND
TAILINGS MANAGEMENT AREA
TMA CONSTRUCTION DIVERSION DAM AND DITCH
EXPLOSIVES FACILITIES
OUTCROP 4 QUARRY
Marr Road
TRANSMISSION LINE
EAST ACCESS ROAD
C6
C5
C4
WATER DISCHARGE POND
WDPD
OUTLET CHANNEL
C9
SP1
SEDIMENT POND #1
WEST CREEK DIVERSION CHANNEL
ROEN ROAD PIT
C7
WCPD
PS1
STOCKPILE POND DIVERSION CHANNEL
CLARK CREEK
CONSTRUCTED WETLAND
CWPD1
CWPD2
CWPD3
CWPD4
WEST CREEK POND
C1
SPDC
SPD
STOCKPILE POND DAM
OVERBURDEN STOCKPILE
PS2
PROCESS PLANT
CRUSHED ORE STOCKPILE
C3
PS3
OUTCROP 3 QUARRY
CLARK CREEK POND
CCPD
C8
CCDC
CLARK CREEK POND DAM
CLARK CREEK DIVERSION CHANNEL
WEST MINE ROCK STOCKPILE
LOSLO CREEK
OPEN PIT
LOW GRADE ORE STOCKPILE
TSPD
WEST STOCKPILE TEMPORARY SEDIMENT POND
SEDIMENT POND #2
SP2
C2
TPD
TEEPLE POND
TEEPLE POND DAM
TEEPLE POND DIVERSION CHANNEL
WATER MANAGEMENT PIPELINE
PIT PROTECTION BERM
EAST MINE ROCK STOCKPILE
MINE ROCK POND
MRPDD
PINEWOOD RIVER

P:\EM\Projects\2011\TC111504 Rainy River\GIS\PTTW_Construction_Works\MXD\Water_Management_Plan_5.mxd

LEGEND

Water Taking Locations (27 locations; labelled with ID)

- Bypass Pump (not to scale)
- Sump (not to scale)
- Final Compliance Point
- Excavated Pond
- Near Surface Bedrock Ridge (approximate outline)

- Initial Water Diversion Route
- Later Water Diversion Route
- Ultimate Water Collection Ditch
- Quarry

Existing Watercourse/Waterbody

- Permanent Watercourse
- Intermittent Watercourse

NOTES:
- Ultimate footprint site plan layout is shown as a faded backdrop for reference purposes.

Datum: NAD83
Projection: UTM Zone 15N

0 1 2 4 6 8 Kilometres

N W E S

newgold™ Rainy River Project

amec foster wheeler

RAINY RIVER PROJECT

Water Management Plan Construction Phase

PROJECT N°: TC111504 | **FIGURE: 3-1**

SCALE: 1:30,000 | DATE: February 2015

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Station	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge2	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge3	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge4	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge5	In Pit Sump 3 Discharge	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge6	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge7	In Pit Sump 4 Discharge	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge8	In Pit Sump 3 Discharge9	In Pit Sump 4 Discharge10	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge11	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge12	Preliminary Phase Mine Rock Pond Discharge (Process Plant Overburden Pile)	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge
2	Discharge Coordinates (UTM	15U 426637E 5410794N	15U 426637E 5410794N	15U 426637E 5410794N	15U 426637E 5410794N	15U 426637E 5410794N	15U 424982E 5409309N	15U 426637E 5410794N	15U 426637E 5410794N	15U 425836E 5409205N	15U 426637E 5410794N	15U 424982E 5409309N	15U 425836E 5409205N	15U 426637E 5410794N	15U 426637E 5410794N	15U 427118E 5409012N	15U 426327E 5410357N
3	Date Sampled	17-Mar-16	17-Mar-16	24-Mar-16	04-Apr-16	12-Apr-16	15-Apr-16	19-Apr-16	29-Apr-16	29-Apr-16	02-May-16	09-May-16	30-May-16	03-Jun-16	04-Jun-16	06-Jun-16	09-Jun-16
4	pH_Field	7.4	7.4	8	7.12	7.59	7.48	8.38	7.77	8	8.03	8.49	8.64	8.63	9.06	8.82	8.48
5	Temp_Field	1	1	20	2.51	3.27	6.5	10.29	8.86	4.81	14.54	16.3	19.64	18.27	16.36	18.8	17.8
6	DO_Field	11.6	11.6		12.5	12.5	11.4	9.6	10.75	10.01	9.29	9.4	28.46	11.78	10.95	11.08	9.08
7	Conductivity	598	597	6.3	476	484	674	460	478	833	486	702	756	426	449	375	408
8	Hardness	295	292	257	252	237	283	246	240	340	248	313	327	222	219	189	213
9	pH_Lab	7.65	7.66	8.00	8.05	8.16	7.98	8.30	8.38	8.11	8.39	8.14	8.26	8.41	8.43	8.39	8.38
10	TSS	9.0	12.5	11.0	13.5	9.5	41.5	30.5	7.5	9.5	16.5	3.5	3.5	10.5	25.5	13	3.5
11	Alkalinity (Total as CaCO3)	250	246	228	228	228	243	228	235	324	237	239	279	199	210	156	166
12	Total Ammonia-N	0.304	0.296	0.208	0.102	0.112	4.26	0.114	0.085	9.03	0.075	3.98	3.65	0.064	0.092	0.004	0.012
13	Ammonia - U	0.001	0.001	**0.01**		**0.001**	0.018	0.005	**0.001**	**0.001**	0.002	0.339	0.526	0.008	0.024	0.001	**0.001**
14	Chloride (Cl)	3.26	3.37	7.15	3.54	2.89	25.8	4.39	4.46	33.9	4.28	46.8	37.4	4.72	4.63	2.08	9.62
15	Nitrate (N)	4.12	4.12	2.04	1.10	0.890	6.87	0.835	0.815	7.90	0.785	6.88	3.22	0.950	1.05	0.01	0.815
16	Nitrite (N)	0.085	0.093	0.027	0.012												
17	Orthophosphate (P)	**0.003**	**0.003**	**0.003**	**0.003**												
18	Sulfate (SO4)	52.3	52.2	39.5	29.5	27.8	45.3	25.8	26.7	46.6	26.2	58.2	51.5	32.2	32.5	39.2	46.6
19	Cyanide, Free																
20	Total Cyanide (CN)																
21	T. Aluminum (Al)	0.343	0.335	0.273	0.588	1.08	0.0015	1.48	0.165	0.0610	0.395	0.0805	0.08	0.534	0.585	0.373	0.404
22	T. Antimony (Sb)	0.00073	0.0007	0.00040	0.00025	0.00025	0.00757	0.00031	0.00027	0.0125	0.00028	0.00966	0.0114	0.00031	0.00030	0.00015	0.00049
23	T. Arsenic (As)	0.0011	0.00106	0.0009	0.0009	0.0011	0.0032	0.0015	0.0012	0.0024	0.0014	0.0042	0.0034	0.0016	0.0016	0.0012	0.0012
24	T. Barium (Ba)	0.0515	0.051	0.0460	0.0464	0.0525	0.0518	0.0574	0.0472	0.0471	0.0489	0.0643	0.0399	0.0455	0.0468	0.0387	0.0512
25	T. Beryllium (Be)	0.00002	0.00001	0.00001	0.00002	0.00003	**0.00001**	0.00005	**0.00001**	**0.00001**	0.00002	**0.00001**	0.00001	0.00002	0.00003	0.00002	0.00002
26	T. Bismuth (Bi)	**<0.00002**	**<0.00002**	**0.00002**	0.00002	0.00002	**0.00002**	0.00002	**0.00002**	**0.00002**	**0.00002**	**0.00002**	0.00002	**0.00002**	**0.00002**	0.00002	**0.00002**
27	T. Boron (B)	0.108	0.105	0.0760	0.0510	0.0480	0.0750	0.0505	0.0490	0.116	0.0545	0.0905	0.104	0.0665	0.0760	0.052	0.0690
28	T. Cadmium (Cd)	0.00002	0.000018	0.000020	0.000020	0.000020	0.000015	0.000025	0.000010	0.000005	0.000010	0.000005	0.000005	0.000010	0.000015	0.00001	0.000010
29	T. Calcium (Ca)	70.6	68.6	67.2	60.5	65.4	68.5	65.9	60.7	67.3	64.6	59.3	64.9	54.3	55.4	36.3	45.9
30	T. Chromium (Cr)	0.00075	0.0007	0.0002	0.0011	0.0016	**0.0001**	0.0025	0.0004	0.0002	0.0007	0.0002	0.0002	0.0010	0.0011	0.0008	0.0009
31	T. Cobalt (Co)	0.00059	0.000556	0.00064	0.00065	0.00075	0.00100	0.00085	0.00038	0.00085	0.00041	0.00069	0.00046	0.00034	0.00034	0.00016	0.00021
32	T. Copper (Cu)	0.0022	0.0021	0.0035	0.0045	0.0042	0.0059	0.0046	0.0030	0.0017	0.0032	0.0010	0.001	0.0030	0.0031	0.0021	0.0037
33	T. Iron (Fe)	0.315	0.3	0.31	0.51	0.77	**0.01**	1.24	0.15	0.07	0.36	0.06	0.11	0.53	0.53	0.28	0.28
34	T. Lead (Pb)	0.00265	0.00106	**0.00001**	0.00033	0.00047	0.00002	0.00058	0.00011	0.00006	0.00031	0.00004	0.00002	0.00022	0.00024	0.00011	0.00018
35	T. Lithium (Li)	0.018	0.0175	0.0158	0.0146	0.0138	0.0276	0.0162	0.0138	0.0544	0.0138	0.0294	0.0334	0.0144	0.0150	0.0172	0.0194
36	T. Magnesium (Mg)	27.2	25.6	26.2	23.7	24.2	30.5	24.3	23.7	43.3	23.7	40.4	41.1	26.3	25.1	22.9	26.6
37	T. Manganese (Mn)	0.108	0.104	0.130	0.113	0.108	0.0798	0.102	0.0665	0.0285	0.0741	0.0033	0.008	0.0238	0.0298	0.0057	0.0059

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38	T. Mercury (Hg)	**0.000002**	**0.000002**	**0.000002**	**0.000002**	**0.000002**	**0.000002**	0.000004	**0.000002**	**0.000002**	**0.000002**	0.000002	0.000002	**0.000002**	**0.000002**	0.000002	**0.000002**
39	T. Molybdenum (Mo)	0.00788	0.00764	0.00550	0.00342	0.00322	0.0178	0.00370	0.00374	0.0123	0.00378	0.0191	0.0113	0.00462	0.00514	0.00766	0.00740
40	T. Nickel (Ni)	0.00166	0.00152	0.0023	0.0025	0.0028	0.0047	0.0033	0.0018	0.0041	0.0020	0.0032	0.0028	0.0017	0.0018	0.0016	0.0019
41	T. Phosphorus (P)	0.0106	0.0092														
42	T. Potassium (K)	4.12	3.87	3.81	3.81	4.05	7.81	4.30	3.81	10.7	3.95	9.80	7.97	4.35	4.38	2.34	4.68
43	T. Selenium (Se)	0.002	0.0015	0.0012	0.0008	0.0008	0.0022	0.0008	0.0008	0.0012	0.0008	0.0014	0.0006	0.0008	0.0008	0.0018	0.0018
44	T. Silver (Ag)	<0.000002	<0.00002	**0.00001**	**0.00001**	**0.00001**	0.00003	0.00001	**0.00001**	0.00001	**0.00001**	0.00002	0.00001	**0.00001**	0.00005	0.00001	0.00001
45	T. Sodium (Na)			9.14	6.10	6.10	21.0	6.66	6.52	30.4	6.44	28.1	25.4	7.90	7.70	6.14	8.02
46	T. Strontium (Sr)	0.230	0.222	0.206	0.169	0.169	0.385	0.169	0.162	0.446	0.166	0.507	0.418	0.167	0.182	0.13	0.141
47	T. Tellurium (Te)			0.00004	0.00004	0.00004	0.00002	0.00004	0.00003	0.00010	0.00004	0.00008	0.00005	0.00003	0.00002	0.00001	0.00002
48	T. Thallium (Tl)	0.000014	0.000014	0.000012	0.000020	0.000028	0.000012	0.000028	0.000010	0.000012	0.000012	0.000024	0.000012	0.000010	0.000014	0.000016	0.000008
49	T. Tin (Sn)	0.00004	0.00004	0.00006	0.00006	0.00006	**0.00002**	0.00008	**0.00002**	**0.00002**	0.00002	0.00002	0.00002	0.00002	0.00004	0.00002	**0.00002**
50	T. Titanium (Ti)	0.016	0.0149	0.00995	0.0257			0.0618				0.00260	0.00295	0.0198	0.0240	0.0145	0.0156
51	T. Tungsten (W)	0.00006	0.00005	0.00005	0.00005	0.00005	0.00032	0.00006	0.00006	0.00047	0.00007	0.00045	0.00048	0.00007	0.00007	0.00003	0.00009
52	T. Uranium (U)	0.005	0.00482	0.00388	0.00336	0.00329	0.00249	0.00352	0.00328	0.00156	0.00338	0.00278	0.00236	0.00538	0.00551	0.00382	0.00559
53	T. Vanadium (V)	0.00166	0.00156	0.00135	0.00245	0.00350	0.00050	0.00490	0.00155	0.00090	0.00220	0.00110	0.0013	0.00280	0.00290	0.0025	0.00255
54	T. Zinc (Zn)	0.106	0.1000	0.0805	0.0220	0.0135	0.0755	0.0100	0.0040	0.0020	0.0040	0.0035	0.002	0.0045	0.0070	0.003	0.0085
55	T. Zirconium (Zr)	0.00055	0.0006	0.00044	0.00102	0.00130	0.00010	0.00148	0.00030	0.00016	0.00062	0.00016	0.00016	0.00060	0.00082	0.0005	0.00054
56	D. Aluminum (Al)	0.002	0.002	0.002	0.002	0.001	0.003	0.003	0.002	0.003	0.002	0.003	0.003	0.004	0.003	0.003	0.006
57	D. Antimony (Sb)	0.00077	0.00072	0.00040	0.00025	0.00022	0.00720	0.00026	0.00030	0.0134	0.00028	0.0103	0.0125	0.00031	0.00030	0.00016	0.00049
58	D. Arsenic (As)	0.00105	0.00105	0.00077	0.00084	0.00093	0.00318	0.00124	0.00131	0.00257	0.00136	0.00413	0.00339	0.00137	0.00138	0.0011	0.00109
59	D. Barium (Ba)	0.0505	0.05	0.0425	0.0427	0.0455	0.0491	0.0462	0.0453	0.0442	0.0462	0.0636	0.0399	0.0412	0.0419	0.0383	0.0457
60	D. Beryllium (Be)	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	0.00001	**0.00001**	**0.00001**	0.00001	**0.00001**
61	D. Bismuth (Bi)	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	0.00002	**0.00002**	**0.00002**	0.00002	**0.00002**
62	D. Boron (B)	0.125	0.12	0.0785	0.0525	0.0450	0.0715	0.0485	0.0465	0.108	0.0480	0.0990	0.101	0.0615	0.0660	0.047	0.0650
63	D. Cadmium (Cd)	**0.000015**	0.000015	0.000015	0.000015	0.000010	0.000015	0.000005	0.000005	0.000005	0.000005	0.000010	0.000005	**0.000005**	**0.000005**	0.000005	**0.000005**
64	D. Calcium (Ca)	72	70.5	62.5	62.8	58.2	64.1	60.4	59.4	68.6	61.3	58.3	64.7	47.0	46.1	36.4	44.9
65	D. Chromium (Cr)	0.0001	0.0002	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	0.0001	0.0001	**0.0001**	0.0002	0.0002
66	D. Cobalt (Co)	0.00045	0.00045	0.00051	0.00044	0.00040	0.00096	0.00034	0.00030	0.00079	0.00029	0.00064	0.0004	0.00013	0.00014	0.00004	0.00009
67	D. Copper (Cu)	0.0016	0.0016	0.0027	0.0028	0.0032	0.0057	0.0028	0.0027	0.0014	0.0026	0.0010	0.0008	0.0020	0.0016	0.0015	0.0027
68	D. Iron (Fe)	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	0.02	**0.01**	**0.01**	0.01	**0.01**
69	D. Lead (Pb)	**0.00166**	0.00049	**0.00001**	**0.00001**	0.00004	0.00002	**0.00001**	0.00004	0.00001	0.00007	0.00001	0.00001	**0.00001**	**0.00001**	0.00001	0.00001
70	D. Lithium (Li)	0.0202	0.0194	0.0172	0.0138	0.0128	0.0254	0.0144	0.0142	0.0564	0.0146	0.0300	0.0346	0.0146	0.0144	0.0168	0.0192
71	D. Magnesium (Mg)	28	28.1	24.5	23.1	22.3	29.9	23.2	22.3	40.9	23.1	40.6	40.1	25.4	25.3	23.7	24.6
72	D. Manganese (Mn)	0.0992	0.0987	0.114	0.102	0.0958	0.0782	0.0768	0.0594	0.0184	0.0579	0.0014	0.0051	0.0049	0.0089	0.0002	0.0007
73	D. Mercury (Hg)	**0.000002**	**0.000002**	**0.000002**	**0.000002**	**0.000002**	**0.000002**	**0.000002**	**0.000002**	**0.000002**	**0.000002**	0.000002	0.000002	**0.000002**	**0.000002**	0.000002	**0.000002**
74	D. Molybdenum (Mo)	0.00786	0.00774	0.00472	0.00332	0.00314	0.0167	0.00366	0.00358	0.0123	0.00354	0.0192	0.0117	0.00502	0.00496	0.00764	0.00708
75	D. Nickel (Ni)	0.0014	0.0014	0.0017	0.0019	0.0018	0.0045	0.0017	0.0017	0.0039	0.0015	0.0032	0.0026	0.0012	0.0012	0.001	0.0015
76	D. Potassium (K)	3.99	4.03	3.78	3.78	3.72	7.32	3.81	3.66	10.7	3.78	9.50	7.5	3.99	4.08	2.37	4.38
77	D. Selenium (Se)	0.002	0.0018	0.0014	0.0010	0.0010	0.0024	0.0010	0.0010	0.0016	0.0010	0.0016	0.0008	0.0008	0.0008	0.0022	0.0022
78	D. Silver (Ag)	0.00001	0.00001	**0.00001**	**0.00001**	**0.00001**	0.00003	**0.00001**	**0.00001**	0.00001	**0.00001**	0.00002	0.00001	**0.00001**	**0.00001**	0.00001	**0.00001**
79	D. Sodium (Na)	9.02	9.2	8.96	6.44	5.48	19.8	6.28	6.24	30.6	6.40	28.4	25.7	8.00	8.14	6.02	7.30
80	D. Strontium (Sr)	0.218	0.219	0.191	0.180	0.163	0.356	0.159	0.151	0.435	0.151	0.508	0.458	0.161	0.160	0.12	0.131
81	D. Tellurium (Te)	0.00003	0.00002	**0.00001**	0.00002	0.00002	0.00003	**0.00001**	0.00001	0.00003	0.00001	0.00003	0.00002	0.00001	**0.00001**	0.00001	**0.00001**
82	D. Thallium (Tl)	0.00001	0.000008	0.000006	0.000010	0.000008	0.000014	0.000006	0.000012	0.000012	0.000006	0.000022	0.00001	**0.000002**	0.000004	0.000004	0.000006
83	D. Tin (Sn)	0.00002	**0.00002**	**0.00002**	0.00002	**0.00002**	0.00004	**0.00002**	**0.00002**	0.00002	**0.00002**	0.00006	0.00012	0.00004	0.00004	0.00004	**0.00002**
84	D. Titanium (Ti)	0.00005	0.00005	0.00010	0.00015			0.00015				0.00005	0.0001	0.00010	0.00020	0.00015	0.00025
85	D. Tungsten (W)	0.00007	0.00006	0.00009	0.00004	0.00004	0.00034	0.00005	0.00006	0.00047	0.00007	0.00048	0.00049	0.00008	0.00007	0.00002	0.00008
86	D. Uranium (U)	0.005	0.00486	0.00360	0.00320	0.00312	0.00256	0.00324	0.00318	0.00151	0.00335	0.00280	0.00237	0.00515	0.00508	0.00393	0.00519
87	D. Vanadium (V)	0.0011	0.00140	0.00060	0.00065	0.00070	0.00055	0.00090	0.00095	0.00065	0.00100	0.00090	0.0011	0.00110	0.00135	0.00135	0.00130
88	D. Zinc (Zn)	0.2580	0.273	0.0765	0.0170	0.0130	0.0730	0.0090	0.0040	0.0035	0.0085	0.0045	0.002	0.0070	0.121	0.002	0.0075
89	D. Zirconium (Zr)	0.00008	0.0001	0.00010	0.00012	0.00010	0.00010	0.00010	0.00010	0.00008	0.00008	0.00004	0.00006	0.00006	0.00006	0.00004	0.00008

	A	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG
1	Station	In Pit Sump 3 Discharge13	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge14	In Pit Sump 4 Discharge15	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge16	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge17	Preliminary Phase Mine Rock Pond Discharge (Process Plant Overburden Pile)18	In Pit Sump 3 Discharge19	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge20	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge21	Process Plant and Crusher Area Temporary Sediment Ponds (North Runoff Pond) Discharge	In Pit Sump 4 Discharge22	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge23	Preliminary Phase Mine Rock Pond Discharge (Process Plant Overburden Pile)24	In Pit Sump 3 Discharge25	In Pit Sump 4 Discharge26	In Pit Sump 4 Discharge27
2	Discharge Coordinates (UTM	15U 424982E 5409309N	15U 426327E 5410357N	15U 425836E 5409205N	15U 426327E 5410357N	15U 426637E 5410794N	15U 427118E 5409012N	15U 424982E 5409309N	15U 426327E 5410357N	15U 426327E 5410357N	15U 426388E 5411267N	15U 425836E 5409205N	15U 426327E 5410357N	15U 427118E 5409012N	15U 424982E 5409309N	15U 425836E 5409205N	15U 425836E 5409205N
3	Date Sampled	27-Jun-16	30-Jun-16	30-Jun-16	04-Jul-16	05-Jul-16	05-Jul-16	15-Jul-16	18-Jul-16	18-Jul-16	20-Jul-16	20-Jul-16	21-Jul-16	25-Jul-16	27-Jul-16	14-Aug-16	14-Aug-16
4	pH_Field	8.52	8.91	8.56	7.87	7.81	8.06	8.39	7.15	7.57	8.32	8.69	8.59	8.65	8.08	6.91	6.93
5	Temp_Field	21.01	20.46	20.9	22.39	22.76	24.32	21	21.64	21.73	25.78	26.85	23.47	25.77	24.06	21.44	21.52
6	DO_Field	8.97	10.03	8.81	7.74	10.93	8.32	9.39	8.72	5.87	8.92	8.92	9.3	8.78	8.77	8.78	8.1
7	Conductivity	498	353	641	356	412	397	584	355	366	416	573	361	423	853	889	895
8	Hardness	212	175	269	183	218	226	247	180	177	182	261	188	207	298	333	329
9	pH_Lab	8.34	8.13	8.19	8.61	8.27	8.53	8.21	8.24	8.39	8.38	8.27	8.48	8.43	8.22	7.71	7.74
10	TSS	13.5	32.5	4.5	7.0	4.5	4	7.0	16.0	12.0	12.5	4.5	8.5	6.5	36.0	5.0	5.5
11	Alkalinity (Total as CaCO3)	164	144	221	147	178	153	168	132	128	74.6	182	145	127	241	275	272
12	Total Ammonia-N	0.104	0.276	1.59	0.018	0.124	0.07	0.188	**0.002**	**0.002**	0.010	1.49	0.026	0.014	10.3	7.47	7.52
13	Ammonia - U	0.013	0.069	0.211	**0.001**	0.004	0.004	0.018	**0.001**	**0.001**	**0.001**	0.359	0.004	0.001	0.616	0.027	0.028
14	Chloride (Cl)	32.9	6.90	38.5	7.20	5.21	5.84	31.4	7.87	9.02	4.85	25.1	1.70	0.28	5.32	38.3	33.2
15	Nitrate (N)	1.25	1.58	2.37	1.38	3.19	0.005	1.52	2.28	3.18	4.85	3.41	1.7	0.25	0.245	9.41	8.12
16	Nitrite (N)																
17	Orthophosphate (P)																
18	Sulfate (SO4)	56.3	37.3	78.2	41.7	36.6	69.4	87.1	33.7	43.0	106	82.6	40.3	0.84	71.4	107	89.9
19	Cyanide, Free																
20	Total Cyanide (CN)																
21	T. Aluminum (Al)	0.250	0.584	0.105		0.0520	0.059	0.173	0.491	0.256	0.181	0.0910	0.324	0.102	0.491	0.152	0.131
22	T. Antimony (Sb)	0.00388	0.00039	0.00732	0.00033	0.00034	0.00019	0.00642	0.00030	0.00036	0.00042	0.00720	0.00036	0.00023	0.0135	0.0175	0.0179
23	T. Arsenic (As)	0.0027	0.0017	0.0027	0.0013	0.0014	0.0013	0.0028	0.0014	0.0013	0.0011	0.0031	0.0013	0.0016	0.0030	0.0027	0.0026
24	T. Barium (Ba)	0.0465	0.0492	0.0415		0.0419	0.04	0.0540	0.0446	0.0441	0.0436	0.0368	0.0458	0.0418	0.0570	0.0470	0.0461
25	T. Beryllium (Be)	0.00001	0.00003	**0.00001**		**0.00001**	0.00001	**0.00001**	0.00002	0.00001	**0.00001**	**0.00001**	0.00001	0.00001	0.00002	**0.00001**	**0.00001**
26	T. Bismuth (Bi)	**0.00002**	0.00016	**0.00002**		**0.00002**	0.00002	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	0.00002	**0.00002**	**0.00002**	**0.00002**
27	T. Boron (B)	0.0835	0.0750	0.0980		0.0975	0.0395	0.0940	0.0740	0.0880	0.122	0.0775	0.0840	0.0445	0.159	0.140	0.136
28	T. Cadmium (Cd)	0.000010	0.000025	0.000015	0.000010	**0.000005**	0.000005	0.000015	0.000015	0.000015	0.000010	0.000020	0.000010	0.000005	0.000010	0.000010	0.000005
29	T. Calcium (Ca)	39.5	45.3	60.1	43.0	44.7	46.6	52.0	42.7	43.1	37.4	59.4	45.3	44.7	67.8	71.0	72.6
30	T. Chromium (Cr)	0.0007	0.0014	0.0003		0.0002	0.0003	0.0004	0.0010	0.0006	0.0006	**0.0001**	0.0007	0.0003	0.0010	**0.0001**	**0.0001**
31	T. Cobalt (Co)	0.00026	0.00048	0.00038	0.00018	0.00018	0.00007	0.00030	0.00034	0.00026	0.00016	0.00034	0.00024	0.00013	0.00108	0.00063	0.00061
32	T. Copper (Cu)	0.0013	0.0046	0.0014	0.0046	0.0019	0.0029	0.0011	0.0046	0.0044	0.0013	0.0028	0.0122	0.0022	0.0028	0.0014	0.0013
33	T. Iron (Fe)	0.29	0.62	0.13		0.06	0.07	0.19	0.52	0.25	0.15	0.09	0.27	0.1	0.58	0.20	0.17
34	T. Lead (Pb)	0.00019	0.00036	0.00012	0.00011	0.00003	0.00007	0.00013	0.00030	0.00023	0.00049	0.00005	0.00040	0.00008	0.00032	0.00010	0.00009
35	T. Lithium (Li)	0.0252	0.0150	0.0256		0.0114	0.0138	0.0250	0.0132	0.0142	0.0212	0.0200	0.0162	0.0142	0.0426	0.0398	0.0392
36	T. Magnesium (Mg)	30.6	24.0	36.7	21.8	23.3	25.2	31.2	18.4	18.4	23.1	28.0	19.9	25.4	41.7	36.8	36.7
37	T. Manganese (Mn)	0.0091	0.0183	0.0179		0.0065	0.0017	0.0123	0.0223	0.0105	0.0062	0.0121	0.0108	0.0029	0.0123	0.0112	0.0102

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2	Discharge Coordinates (UTM	15U 424982E 5409309N	15U 426327E 5410357N	15U 425836E 5409205N	15U 426327E 5410357N	15U 426637E 5410794N	15U 427118E 5409012N	15U 424982E 5409309N	15U 426327E 5410357N	15U 426327E 5410357N	15U 426388E 5411267N	15U 425836E 5409205N	15U 426327E 5410357N	15U 427118E 5409012N	15U 424982E 5409309N	15U 425836E 5409205N	15U 425836E 5409205N
3	Date Sampled	27-Jun-16	30-Jun-16	30-Jun-16	04-Jul-16	05-Jul-16	05-Jul-16	15-Jul-16	18-Jul-16	18-Jul-16	20-Jul-16	20-Jul-16	21-Jul-16	25-Jul-16	27-Jul-16	14-Aug-16	14-Aug-16
38	T. Mercury (Hg)	0.000002	**0.000002**	**0.000002**	0.000002			**0.000002**	**0.000002**	0.000002	**0.000002**	0.000028	0.000002	0.000002	**0.000002**	**0.000002**	**0.000002**
39	T. Molybdenum (Mo)	0.0144	0.00726	0.0158		0.00624	0.00806	0.0170	0.00568	0.00692	0.0106	0.0137	0.00620	0.00876	0.0163	0.0166	0.0168
40	T. Nickel (Ni)	0.0009	0.0025	0.0017	0.0020	0.0011	0.0013	0.0014	0.0022	0.0018	0.0007	0.0025	0.0023	0.0013	0.0041	0.0028	0.0027
41	T. Phosphorus (P)																
42	T. Potassium (K)	5.67	4.72	7.94		4.17	2.45	7.19	3.94	4.15	4.01	6.97	4.58	2.79	11.6	11.0	10.6
43	T. Selenium (Se)	0.0006	0.0018	0.0008		0.0008	0.0022	0.0010	0.0012	0.0014	0.0028	0.0012	0.0010	0.0024	0.0016	0.0012	0.0010
44	T. Silver (Ag)	**0.00001**	**0.00001**	**0.00001**		**0.00001**	0.00001	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	0.00001	0.00003	**0.00001**	**0.00001**
45	T. Sodium (Na)	18.9	7.68	25.3		9.18	6.46	22.3	5.80	6.94	13.1	19.2	5.68	7.64	45.7	38.0	36.3
46	T. Strontium (Sr)	0.285	0.131	0.383		0.173	0.146	0.340	0.131	0.132	0.179	0.315	0.163	0.147	0.582	0.608	0.626
47	T. Tellurium (Te)	0.00004	0.00003	0.00005		**0.00001**	0.00002	0.00006	0.00003	0.00005	0.00002	0.00005	0.00004	0.00002	0.00007	0.00004	0.00005
48	T. Thallium (Tl)	0.000006	0.000024	0.000020		0.000012	0.000006	0.000010	0.000012	0.000010	0.000006	0.000020	0.000014	0.000008	0.000024	0.000024	0.000024
49	T. Tin (Sn)	0.00004	0.00004	**0.00002**		0.00004	0.00004	0.00004	0.00004	0.00004	0.00004	**0.00002**	0.00004	0.00002	0.00004	0.00002	0.00002
50	T. Titanium (Ti)		0.0215	0.00345		0.00170	0.00205	0.00630	0.0182	0.00955	0.00645	0.00325	0.00725	0.00365	0.0207	0.00640	0.00500
51	T. Tungsten (W)	0.00023	0.00008	0.00049		0.00006	0.00002	0.00053	0.00007	0.00007	0.00003	0.00065	0.00008	0.00003	0.00060	0.00058	0.00058
52	T. Uranium (U)	0.00260	0.00476	0.00296		0.00838	0.0038	0.00317	0.00401	0.00500	0.00768	0.00261	0.00464	0.0037	0.00182	0.00183	0.00185
53	T. Vanadium (V)	0.00255	0.00375	0.00185		0.00140	0.00165	0.00195	0.00290	0.00230	0.00145	0.00155	0.00230	0.0025	0.00270	0.00150	0.00140
54	T. Zinc (Zn)	0.0040	0.0090	0.0010	0.0070	0.0010	0.003	0.0025	0.0060	0.0055	0.0015	0.0020	0.0145	0.0015	0.0040	0.0075	0.0070
55	T. Zirconium (Zr)	0.00034	0.00068	0.00020		0.00064	0.00012	0.00026	0.00068	0.00046	0.00038	0.00024	0.00040	0.0002	0.00056	0.00026	0.00024
56	D. Aluminum (Al)	0.022	0.005	0.006		0.002	0.002	0.003	0.006	0.006	0.023	0.004	0.007	0.004	0.003	**0.001**	**0.001**
57	D. Antimony (Sb)	0.00382	0.00041	0.00752	0.00034	0.00026	0.00015	0.00663	0.00031	0.00035	0.00042	0.00738	0.00034	0.00024	0.0136	0.0167	0.0169
58	D. Arsenic (As)	0.00258	0.00111	0.00244	0.00119	0.00135	0.00126	0.00267	0.00120	0.00116	0.00099	0.00312	0.00121	0.0015	0.00275	0.00272	0.00278
59	D. Barium (Ba)	0.0463	0.0389	0.0394		0.0383	0.0376	0.0493	0.0383	0.0388	0.0420	0.0388	0.0459	0.0415	0.0514	0.0456	0.0459
60	D. Beryllium (Be)	**0.00001**	**0.00001**	**0.00001**		**0.00001**	0.00001	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	0.00001	**0.00001**	**0.00001**	**0.00001**
61	D. Bismuth (Bi)	**0.00002**	**0.00002**	**0.00002**		**0.00002**	0.00002	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	0.00002	**0.00002**	**0.00002**	**0.00002**
62	D. Boron (B)	0.0775	0.0630	0.0845		0.0935	0.034	0.0910	0.0705	0.0845	0.128	0.0780	0.0730	0.035	0.122	0.120	0.123
63	D. Cadmium (Cd)	0.000015	**0.000005**	0.000005	**0.000005**	**0.000005**	0.000005	0.000010	0.000005	0.000010	0.000005	0.000020	0.000005	0.000005	0.000005	0.000010	0.000005
64	D. Calcium (Ca)	37.6	38.9	54.1	40.7	47.4	46.3	49.7	41.8	40.8	36.2	58.7	43.3	42.7	58.0	72.5	72.2
65	D. Chromium (Cr)	0.0002	0.0001	**0.0001**		**0.0001**	0.0001	**0.0001**	0.0001	0.0002	0.0002	**0.0001**	**0.0001**	0.0001	**0.0001**	**0.0001**	**0.0001**
66	D. Cobalt (Co)	0.00016	0.00013	0.00020	0.00011	0.00015	0.00004	0.00014	0.00013	0.00014	0.00008	0.00032	0.00013	0.00007	0.00080	0.00053	0.00052
67	D. Copper (Cu)	0.0014	0.0029	0.0007	0.0039	0.0016	0.0015	0.0006	0.0038	0.0039	0.0009	0.0018	0.0052	0.0019	0.0019	0.0009	0.0011
68	D. Iron (Fe)	0.02	**0.01**	**0.01**		**0.01**	0.01	**0.01**	0.02	**0.01**	**0.01**	**0.01**	**0.01**	0.01	**0.01**	**0.01**	**0.01**
69	D. Lead (Pb)	0.00014	**0.00001**	**0.00001**	**0.00001**	0.00002	0.00001	**0.00001**	0.00001	0.00001	0.00014	**0.00001**	0.00002	0.00002	0.00003	**0.00001**	0.00002
70	D. Lithium (Li)	0.0246	0.0148	0.0256		0.0124	0.0134	0.0260	0.0126	0.0140	0.0234	0.0214	0.0156	0.013	0.0384	0.0378	0.0382
71	D. Magnesium (Mg)	28.8	18.9	32.4	19.7	24.2	26.7	29.8	18.4	18.3	22.4	27.8	19.4	24.4	37.1	37.0	36.1
72	D. Manganese (Mn)	0.0033	0.0011	0.0011		0.0001	0.0001	**0.0001**	0.0065	0.0023	0.0005	0.0023	0.0026	0.0006	0.0012	0.0059	0.0054
73	D. Mercury (Hg)	**0.000002**	**0.000002**	**0.000002**	**0.000002**			**0.000002**	**0.000002**	**0.000002**	**0.000002**	**0.000002**	0.000004	0.000002	**0.000002**	**0.000002**	**0.000002**
74	D. Molybdenum (Mo)	0.0142	0.00732	0.0156		0.00648	0.00788	0.0170	0.00534	0.00648	0.0103	0.0135	0.00598	0.0084	0.0152	0.0150	0.0152
75	D. Nickel (Ni)	0.0009	0.0012	0.0013	0.0017	0.0010	0.0011	0.0010	0.0016	0.0015	0.0005	0.0024	0.0019	0.0012	0.0032	0.0029	0.0029
76	D. Potassium (K)	5.61	3.91	7.61		4.31	2.45	6.80	3.97	4.34	3.88	7.24	4.48	2.6	10.9	11.6	11.2
77	D. Selenium (Se)	0.0006	0.0018	0.0008		0.0008	0.0022	0.0010	0.0014	0.0016	0.0032	0.0012	0.0012	0.0024	0.0014	0.0012	0.0012
78	D. Silver (Ag)	**0.00001**	**0.00001**	**0.00001**		**0.00001**	0.00001	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	0.00001	0.00002	**0.00001**	**0.00001**
79	D. Sodium (Na)	20.5	6.72	23.5		9.06	6.36	21.6	6.18	7.28	13.5	20.6	6.00	7.18	43.9	38.9	39.2
80	D. Strontium (Sr)	0.289	0.122	0.385		0.176	0.142	0.337	0.126	0.128	0.178	0.316	0.159	0.139	0.532	0.558	0.564
81	D. Tellurium (Te)	0.00001	**0.00001**	0.00002		**0.00001**	0.00001	0.00003	0.00002	**0.00001**	0.00001	0.00002	0.00002	0.00002	0.00003	0.00006	0.00005
82	D. Thallium (Tl)	0.000006	0.000004	0.000016		0.000008	0.000002	0.000008	0.000006	0.000006	0.000004	0.000016	0.000010	0.000006	0.000020	0.000022	0.000022
83	D. Tin (Sn)	0.00012	**0.00002**	**0.00002**		**0.00002**	0.00002	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	0.00006	0.00004	**0.00002**	**0.00002**
84	D. Titanium (Ti)		0.00015	0.00010		**0.00005**	0.00015	0.00010	0.00030	0.00020	0.00010	0.00010	0.00025	0.00015	0.00005	**0.00005**	0.00010
85	D. Tungsten (W)	0.00025	0.00009	0.00054		0.00005	0.00002	0.00057	0.00007	0.00008	0.00003	0.00061	0.00008	0.00003	0.00071	0.00057	0.00058
86	D. Uranium (U)	0.00260	0.00444	0.00275		0.00867	0.00401	0.00314	0.00392	0.00470	0.00751	0.00264	0.00436	0.00386	0.00184	0.00170	0.00172
87	D. Vanadium (V)	0.00210	0.00160	0.00135		0.00125	0.00135	0.00135	0.00150	0.00180	0.00095	0.00130	0.00165	0.00215	0.00100	0.00105	0.00100
88	D. Zinc (Zn)	0.132	0.0035	0.0085	0.0035	0.0005	0.001	**0.0005**	0.0070	0.0695	0.0025	0.0020	0.0075	0.0015	0.0025	0.0080	0.0085
89	D. Zirconium (Zr)	0.00008	0.00008	0.00004		0.00004	0.00004	0.00004	0.00012	0.00008	0.00002	0.00004	0.00012	0.00006	0.00002	0.00004	0.00004

	A	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW
1	Station	In Pit Sump 4 Discharge28	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge29	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge30	Preliminary Phase Mine Rock Pond Discharge (Process Plant Overburden Pile)31	In Pit Sump 4 Discharge32	In Pit Sump 4 Discharge33	In Pit Sump 4 Discharge34	In Pit Sump 3 Discharge35	In Pit Sump 3 Discharge36	In Pit Sump 3 Discharge37	WMP Area Excavated Settling Pond Discharge	WMP Area Excavated Settling Pond Discharge38	WMP Area Excavated Settling Pond Discharge39	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge40	In Pit Sump 4 Discharge41
2	Discharge Coordinates (UTM	15U 425836E 5409205N	15U 426637E 5410794N	15U 426637E 5410794N	15U 427118E 5409012N	15U 425836E 5409205N	15U 425836E 5409205N	15U 425836E 5409205N	15U 424982E 5409309N	15U 424982E 5409309N	15U 424982E 5409309N	15U 420510E 5412400N	15U 420510E 5412400N	15U 420510E 5412400N	15U 423937E 5408984N	15U 423937E 5408984N	15U 425836E 5409205N
3	Date Sampled	14-Aug-16	22-Aug-16	23-Aug-16	24-Aug-16	24-Aug-16	24-Aug-16	24-Aug-16	28-Aug-16	28-Aug-16	29-Aug-16	30-Aug-16	30-Aug-16	30-Aug-16	04-Sep-16	04-Sep-16	05-Sep-16
4	pH_Field	6.79	8.22	7.98	8.95	7.73	7.58	7.56	7.18	7.47	7.67	8.04	8.45	7.86	7.35	7.36	7.81
5	Temp_Field	21.54	21.36	22.29	23.11	22.06	22.08	22.08	19	19.49	19.21	18.26	19.61	19.59	20.39	20.07	19.8
6	DO_Field	14.08	8.59	9.47	8.62	8.81	8.62	8.63	9.2	9.1	8.99	6.79	8.82	6.63	9.09	9.95	8.97
7	Conductivity	898	461	463	428	902	903	904	800	802	789	598	427	500	674	668	939
8	Hardness	333	208	207	202	385	413	383	296	308	302	311	216	259	281	275	371
9	pH_Lab	7.63	8.36	8.37	8.54	7.89	7.87	7.81	7.82	7.87	8.09	8.32	8.51	8.12	7.86	7.89	8
10	TSS	11.0	10.0	12.0	6.5	6.5	11.0	3.5	4.5	5	24.5	3.5	12	5	0.5	1.5	4
11	Alkalinity (Total as CaCO3)	279	159	163	117	311	313	313	259	256	252	257	185	234	252	257	273
12	Total Ammonia-N	7.48	0.020	0.032	0.008	5.32	5.28	5.31	6.18	6.04	5.94	0.284	0.1	0.084	2.84	2.89	4.95
13	Ammonia - U	0.020	0.001	0.001	0.001	0.128	0.091	0.087	0.034	0.067	0.102	**0.01**	**0.01**	**0.002**	0.026	0.026	0.122
14	Chloride (Cl)	37.5	6.82	6.65	7.23	32.6	31.6	34.4	29	29	28.6	3.9	4.21	4.49	13.9	16.3	53.9
15	Nitrate (N)	9.25	6.78	6.54	0.005	6.72	6.56	7.14	8.31	8.32	8.19	0.01	0.045	0.005	4.41	5.24	8.19
16	Nitrite (N)								0.245	0.238	0.23				0.266	0.322	0.434
17	Orthophosphate (P)																
18	Sulfate (SO4)	105	37.9	36.1	100	112	109	118	102	102	100	86.5	49.9	42.6	59.7	73	123
19	Cyanide, Free				0.001	0.002	0.002	0.002									
20	Total Cyanide (CN)				0.001	0.003	0.003	0.003	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.004
21	T. Aluminum (Al)	0.184	0.0680	0.146	0.0935	0.148	0.242	0.0960	0.225	0.207	0.38				0.082	0.0815	0.164
22	T. Antimony (Sb)	0.0180	0.00023	0.00025	0.00027	0.0185	0.0188	0.0188	0.0156	0.0155	0.0155	0.00025	0.00035	0.00025	0.0121	0.0117	0.0181
23	T. Arsenic (As)	0.0027	0.0013	0.0014	0.002	0.0028	0.0029	0.0027	0.0016	0.0016	0.0016	0.0025	0.002	0.0026	0.0018	0.0018	0.0024
24	T. Barium (Ba)	0.0470	0.0423	0.0440	0.0427	0.0439	0.0461	0.0443	0.0555	0.0532	0.0578				0.0432	0.0421	0.0356
25	T. Beryllium (Be)	0.00001	**0.00001**	**0.00001**	0.00001	**0.00001**	0.00001	**0.00001**	0.00001	0.00001	0.00002				0.00001	0.00001	0.00001
26	T. Bismuth (Bi)	**0.00002**	**0.00002**	**0.00002**	0.00002	**0.00002**	**0.00002**	**0.00002**	0.00002	0.00002	0.00002				0.00002	0.00002	0.00002
27	T. Boron (B)	0.135	0.169	0.180	0.0465	0.129	0.131	0.129	0.119	0.124	0.127				0.12	0.118	0.155
28	T. Cadmium (Cd)	0.000005	0.000005	0.000005	0.000005	0.000020	0.000020	0.000015	0.00001	0.00001	0.00001	0.000005	0.000015	0.000015	0.00001	0.00001	0.00001
29	T. Calcium (Ca)	69.0	44.3	44.7	36.2	85.7	89.1	84.8	51	51.9	52.2	68.2	43.1	53.4	53.2	53.1	77.7
30	T. Chromium (Cr)	**0.0001**	**0.0001**	0.0044	0.0003	0.0003	0.0005	0.0007	0.0005	0.0004	0.0007				0.0003	0.0003	0.0003
31	T. Cobalt (Co)	0.00062	0.00021	0.00026	0.00011	0.00054	0.00061	0.00053	0.00041	0.00039	0.00042	0.00021	0.00045	0.0005	0.0003	0.00029	0.00053
32	T. Copper (Cu)	0.0016	0.0020	0.0025	0.0019	0.0015	0.0023	0.0012	0.0008	0.0008	0.001	0.0026	0.0039	0.0030	0.0013	0.0012	0.0053
33	T. Iron (Fe)	0.23	0.07	0.21	0.11	0.19	0.30	0.14	0.21	0.2	0.31				0.09	0.08	0.19
34	T. Lead (Pb)	0.00012	0.00009	0.00010	0.00006	0.00014	0.00020	0.00012	0.00012	0.00012	0.00018	0.0001	0.00031	0.0003	0.00009	0.00006	0.00011
35	T. Lithium (Li)	0.0388	0.0124	0.0122	0.0142	0.0328	0.0336	0.0330	0.0424	0.0436	0.0422				0.0344	0.034	0.0352
36	T. Magnesium (Mg)	36.3	24.9	25.2	27.8	41.2	42.9	41.0	38.6	39.1	39.7	34.7	26.9	31.9	36.5	35.4	36.8
37	T. Manganese (Mn)	0.0119	0.0113	0.0147	0.0043	0.0509	0.0562	0.0500	0.0053	0.0053	0.007				0.021	0.0219	0.0405

	A	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW
1	Station	In Pit Sump 4 Discharge28	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge29	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge30	Preliminary Phase Mine Rock Pond Discharge (Process Plant Overburden Pile)31	In Pit Sump 4 Discharge32	In Pit Sump 4 Discharge33	In Pit Sump 4 Discharge34	In Pit Sump 3 Discharge35	In Pit Sump 3 Discharge36	In Pit Sump 3 Discharge37	WMP Area Excavated Settling Pond Discharge	WMP Area Excavated Settling Pond Discharge38	WMP Area Excavated Settling Pond Discharge39	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge40	In Pit Sump 4 Discharge41
2	Discharge Coordinates (UTM	15U 425836E 5409205N	15U 426637E 5410794N	15U 426637E 5410794N	15U 427118E 5409012N	15U 425836E 5409205N	15U 425836E 5409205N	15U 425836E 5409205N	15U 424982E 5409309N	15U 424982E 5409309N	15U 424982E 5409309N	15U 420510E 5412400N	15U 420510E 5412400N	15U 420510E 5412400N	15U 423937E 5408984N	15U 423937E 5408984N	15U 425836E 5409205N
3	Date Sampled	14-Aug-16	22-Aug-16	23-Aug-16	24-Aug-16	24-Aug-16	24-Aug-16	24-Aug-16	28-Aug-16	28-Aug-16	29-Aug-16	30-Aug-16	30-Aug-16	30-Aug-16	04-Sep-16	04-Sep-16	05-Sep-16
38	T. Mercury (Hg)	**0.000002**	**0.000002**	**0.000002**	0.000002	**0.000002**	**0.000002**	**0.000002**	0.000002	0.000002	0.000002				0.000002	0.000002	0.000002
39	T. Molybdenum (Mo)	0.0160	0.00788	0.00782	0.00916	0.0145	0.0146	0.0145	0.0132	0.0135	0.0135				0.0139	0.0137	0.0175
40	T. Nickel (Ni)	0.0027	0.0015	0.0005	0.0005	0.0032	0.0034	0.0032	0.0015	0.0014	0.0015	0.002	0.0024	0.0029	0.0015	0.0013	0.0029
41	T. Phosphorus (P)																
42	T. Potassium (K)	10.6	4.77	5.06	2.9	10.2	10.7	10.2	9.73	9.96	9.95				6.95	6.65	9.97
43	T. Selenium (Se)	0.0010	0.0008	0.0008	0.002	0.0010	0.0010	0.0010	0.001	0.0012	0.0012				0.001	0.001	0.001
44	T. Silver (Ag)	**0.00001**	**0.00001**	**0.00001**	0.00001	**0.00001**	**0.00001**	**0.00001**	0.00001	0.00001	0.00001				0.00001	0.00001	0.00001
45	T. Sodium (Na)	35.4	12.0	11.8	8.36	33.1	33.7	32.7	36.1	36.5	36.4				24.5	24.2	36.1
46	T. Strontium (Sr)	0.595	0.204	0.207	0.148	0.597	0.609	0.599	0.545	0.548	0.561				0.398	0.396	0.697
47	T. Tellurium (Te)	0.00005	0.00002	0.00003	0.00004	0.00008	0.00013	0.00010	0.00008	0.00007	0.00008				0.00008	0.00009	0.00017
48	T. Thallium (Tl)	0.000024	0.000010	0.000014	0.000004	0.000032	0.000032	0.000030	0.00002	0.000016	0.000018				0.000016	0.000018	0.000028
49	T. Tin (Sn)	0.00004	0.00006	0.00004	0.00002	0.00002	0.00002	0.00002	0.00004	0.00004	0.00008				0.00006	0.00002	0.00002
50	T. Titanium (Ti)	0.00730	0.00255	0.00560	0.00345	0.00560	0.00840	0.00410	0.00845	0.00865	0.0149				0.00255	0.0026	0.0068
51	T. Tungsten (W)	0.00058	0.00005	0.00005	0.00003	0.00047	0.00047	0.00050	0.00039	0.00039	0.00037				0.00033	0.00031	0.00077
52	T. Uranium (U)	0.00185	0.0129	0.0145	0.00401	0.00214	0.00219	0.00223	0.00114	0.00111	0.00111				0.00352	0.00343	0.00215
53	T. Vanadium (V)	0.00160	0.00140	0.00160	0.0022	0.00150	0.00180	0.00135	0.00165	0.0016	0.00205				0.0017	0.0017	0.00135
54	T. Zinc (Zn)	0.0070	0.0020	0.0045	0.0015	0.0100	0.0110	0.0305	0.006	0.005	0.0045	0.0010	**0.003**	0.0020	0.002	0.006	0.002
55	T. Zirconium (Zr)	0.00026	0.00016	0.00024	0.00014	0.00022	0.00022	0.00036	0.0003	0.00034	0.00046				0.00012	0.00012	0.00016
56	D. Aluminum (Al)	**0.001**	0.006	0.005	0.005	0.002	0.003	0.002	0.003	0.002	0.003				0.006	0.005	0.006
57	D. Antimony (Sb)	0.0174	0.00022	0.00023	0.00024	0.0190	0.0191	0.0184	0.0166	0.0166	0.0165	0.00027	0.00036	0.00025	0.0121	0.012	0.0189
58	D. Arsenic (As)	0.00284	0.00126	0.00129	0.00181	0.00269	0.00263	0.00269	0.00152	0.00149	0.00152	0.00264	0.00187	0.00245	0.00173	0.00171	0.00233
59	D. Barium (Ba)	0.0452	0.0417	0.0433	0.0408	0.0450	0.0419	0.0438	0.0507	0.0483	0.0503				0.0425	0.0414	0.0359
60	D. Beryllium (Be)	**0.00001**	**0.00001**	**0.00001**	0.00001	**0.00001**	**0.00001**	**0.00001**	0.00001	0.00001	0.00001				0.00001	0.00001	0.00001
61	D. Bismuth (Bi)	**0.00002**	**0.00002**	**0.00002**	0.00002	**0.00002**	**0.00002**	**0.00002**	0.00002	0.00002	0.00002				0.00002	0.00002	0.00002
62	D. Boron (B)	0.120	0.155	0.151	0.0405	0.112	0.132	0.116	0.141	0.137	0.134				0.109	0.107	0.159
63	D. Cadmium (Cd)	0.000010	**0.000005**	**0.000005**	0.000005	0.000015	0.000015	0.000015	0.00001	0.000005	0.00001	**0.000005**	**0.000005**	0.000005	0.00001	0.00001	0.000005
64	D. Calcium (Ca)	72.9	41.4	41.3	35	84.9	96.0	85.8	52.1	56.3	55.3	65.8	40.2	49.9	52.7	51.2	84.9
65	D. Chromium (Cr)	**0.0001**	0.0002	0.0045	0.0001	**0.0001**	**0.0001**	**0.0001**	0.0001	0.0001	0.0001				0.0001	0.0001	0.0001
66	D. Cobalt (Co)	0.00051	0.00015	0.00015	0.00006	0.00039	0.00039	0.00037	0.00032	0.0003	0.0003	0.00015	0.0002	0.00025	0.00021	0.0002	0.00043
67	D. Copper (Cu)	0.0009	0.0018	0.0019	0.0015	0.0010	0.0010	0.0008	0.0005	0.0004	0.0004	0.0024	0.003	0.0023	0.0008	0.0009	0.0009
68	D. Iron (Fe)	**0.01**	**0.01**	0.04	0.01	**0.01**	**0.01**	**0.01**	0.01	0.01	0.01				0.01	0.01	0.01
69	D. Lead (Pb)	**0.00001**	0.00001	**0.00001**	0.00001	**0.00001**	0.00003	0.00001	0.00002	0.00002	0.00001	**0.00001**	**0.00001**	**0.00001**	0.00001	0.00001	0.00001
70	D. Lithium (Li)	0.0372	0.0114	0.0106	0.013	0.0288	0.0374	0.0302	0.0442	0.0436	0.0426				0.0328	0.0324	0.0382
71	D. Magnesium (Mg)	36.6	25.4	25.1	27.8	41.9	42.1	41.0	40.3	40.6	39.8	35.6	28	32.7	36.2	35.9	38.5
72	D. Manganese (Mn)	0.0059	0.0013	0.0020	0.001	0.0398	0.0407	0.0391	0.0027	0.0024	0.0015				0.0161	0.0169	0.037
73	D. Mercury (Hg)	**0.000002**	**0.000002**	**0.000002**	0.000002	**0.000002**	**0.000002**	**0.000002**	0.000002	0.000002	0.000002				0.000002	0.000002	0.000002
74	D. Molybdenum (Mo)	0.0148	0.00750	0.00724	0.00852	0.0137	0.0138	0.0142	0.0135	0.0131	0.0131				0.0129	0.0126	0.017
75	D. Nickel (Ni)	0.0028	0.0008	0.0009	0.0008	0.0034	0.0034	0.0033	0.0012	0.0011	0.0011	0.0018	0.0017	0.0022	0.0011	0.0012	0.0026
76	D. Potassium (K)	11.4	4.74	4.77	2.78	10.3	10.5	9.88	10	10.1	10.3				7.36	7.11	11.1
77	D. Selenium (Se)	0.0012	0.0006	0.0008	0.0022	0.0010	0.0010	0.0010	0.0012	0.0012	0.0012				0.001	0.001	0.001
78	D. Silver (Ag)	**0.00001**	**0.00001**	**0.00001**	0.00001	**0.00001**	**0.00001**	**0.00001**	0.00001	0.00001	0.00001				0.00001	0.00001	0.00001
79	D. Sodium (Na)	38.9	12.2	11.7	8.02	33.2	34.7	32.6	37.1	38	38.4				23.6	23.6	38.7
80	D. Strontium (Sr)	0.548	0.183	0.184	0.135	0.554	0.599	0.559	0.552	0.546	0.539				0.383	0.368	0.693
81	D. Tellurium (Te)	0.00003	**0.00001**	**0.00001**	0.00001	0.00003	0.00002	0.00002	0.00002	0.00002	0.00003				0.00002	0.00002	0.00005
82	D. Thallium (Tl)	0.000020	0.000006	0.000004	0.000002	0.000026	0.000030	0.000026	0.000016	0.000014	0.000014				0.000016	0.000016	0.000028
83	D. Tin (Sn)	**0.00002**	0.00004	**0.00002**	0.00002	0.00004	**0.00002**	**0.00002**	0.00002	0.00002	0.00002				0.00002	0.00002	0.00002
84	D. Titanium (Ti)	**0.00005**	0.00010	0.00010	0.00005	**0.00005**	0.00005	0.00010	0.0001	0.00005	0.0001				0.00005	0.00005	0.00005
85	D. Tungsten (W)	0.00056	0.00006	0.00006	0.00002	0.00048	0.00050	0.00047	0.0004	0.00039	0.00037				0.00034	0.00032	0.00078
86	D. Uranium (U)	0.00171	0.0139	0.0135	0.00382	0.00210	0.00202	0.00207	0.00113	0.00112	0.00113				0.00336	0.00319	0.00194
87	D. Vanadium (V)	0.00105	0.00110	0.00110	0.0018	0.00095	0.00095	0.00090	0.001	0.00105	0.00105				0.0014	0.0014	0.00085
88	D. Zinc (Zn)	0.0065	0.0010	0.0035	0.001	0.0100	0.0100	0.0100	0.0055	0.005	0.008	0.0010	**0.0005**	0.0005	0.002	0.011	0.002
89	D. Zirconium (Zr)	0.00004	0.00006	0.00004	0.00004	0.00006	0.00006	0.00006	0.00004	0.00004	0.00004				0.00002	0.00002	0.00004

	A	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM
1	Station	In Pit Sump 4 Discharge42	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge43	WMP Area Excavated Settling Pond Discharge44	In Pit Sump 4 Discharge45	WMP Area Excavated Settling Pond Discharge46	In Pit Sump 3 Discharge47	In Pit Sump 3 Discharge48	In Pit Sump 3 Discharge49	In Pit Sump 3 Discharge50	WMP Area Excavated Settling Pond Discharge51	WMP Area Excavated Settling Pond Discharge52	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge53	In Pit Sump 3 Discharge54	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge55	In Pit Sump 3 Discharge56	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge57
2	Discharge Coordinates (UTM	15U 425836E 5409205N	15U 423937E 5408984N	15U 420510E 5412400N	15U 425836E 5409205N	15U 420510E 5412400N	15U 424982E 5409309N	15U 424982E 5409309N	15U 424982E 5409309N	15U 424982E 5409309N	15U 420510E 5412400N	15U 420510E 5412400N	15U 423937E 5408984N	15U 424982E 5409309N	15U 426637E 5410794N	15U 424982E 5409309N	15U 423937E 5408984N
3	Date Sampled	05-Sep-16	05-Sep-16	05-Sep-16	06-Sep-16	06-Sep-16	09-Sep-16	09-Sep-16	10-Sep-16	10-Sep-16	12-Sep-16	12-Sep-16	16-Sep-16	16-Sep-16	17-Sep-16	17-Sep-16	17-Sep-16
4	pH_Field	7.58	7.39	7.8	7.82	8.3	7.63	7.7	7.71	7.71	8.68	8.68	7.16	6.89	8.3	7.28	7.6
5	Temp_Field	19.19	19.88	19.88	19	20.5	20	18.14	19.86	19.86	19.02	19.02	16.2	15.9	17.3	15.8	16.6
6	DO_Field	9.61	9.19	7.91	9	6.72	4.11	5.63	6.26	6.26	3.39	3.39	6.95	9.61	7.72	7.73	6.5
7	Conductivity	948	660	614	931	605	882	878	879	871	601	602	783	849	520	843	782
8	Hardness	373	272	306	356	310	315	317	309	329	308	302	320	338	243	341	324
9	pH_Lab	8.01	8.03	8.3	7.94	8.38	7.94	8.07	8.14	8.16	8.31	8.30	7.61	7.41	8.35	7.61	7.74
10	TSS	2	17	3.5	4.5	4	9.5	4.5	4.0	3.0	9.0	6.0	7	3.5	7.0	3.5	8.5
11	Alkalinity (Total as CaCO3)	278	253	260	274	259	281	282	279	288	267	264	256	294	194	290	264
12	Total Ammonia-N	4.98	2.74	0.092	4.91	0.016	6.59	6.70	6.40	6.49	0.204	0.038	5.84	8.37	0.090	8.23	5.88
13	Ammonia - U	0.07	0.026	**0.002**	0.117	**0.001**	0.109	0.114	0.126	0.128	0.031	0.006	0.025	0.019	0.005	0.045	0.071
14	Chloride (Cl)	54.6	15.9	3.89	54.5	3.89	37.9	38.8	35.9	32.3	3.89	3.95	23	23.5	10.7	24.2	23.9
15	Nitrate (N)	8.22	5.08	0.02	8.24	0.015	12.0	12.2	11.4	10.2	**0.005**	**0.005**	10.8	13.3	9.09	13.2	10.8
16	Nitrite (N)	0.44	0.309	0.001	0.426	0.002	0.443	0.429	0.397	0.351	**0.001**	**0.001**	0.488	0.465	0.141	0.464	0.508
17	Orthophosphate (P)																
18	Sulfate (SO4)	123	70.6	87.5	124	76	98.7	100	91.2	82.0	89.1	89.8	95.5	80.5	55.9	81.0	96.7
19	Cyanide, Free																
20	Total Cyanide (CN)	0.004	0.001	0.001	0.003	0.001	0.006	0.005	0.005	0.005	**0.001**	**0.001**	0.004	0.020	0.001	0.017	0.004
21	T. Aluminum (Al)	0.104	0.39		0.075	0.156	0.124	0.0710	0.0525	0.0635	0.334	0.185	0.143	0.0820	0.218	0.105	0.234
22	T. Antimony (Sb)	0.0184	0.0114	0.00027	0.019	0.00026	0.0177	0.0174	0.0177	0.0177	0.00028	0.00028	0.015	0.0157	0.00024	0.0156	0.0151
23	T. Arsenic (As)	0.0024	0.0018	0.0025	0.0024	0.0025	0.0026	0.0029	0.0026	0.0026	0.0025	0.0024	0.0022	0.0041	0.0011	0.0040	0.0022
24	T. Barium (Ba)	0.036	0.0443		0.0369	0.0577	0.0492	0.0526	0.0503	0.0502	0.0611	0.0595	0.0459	0.0473	0.0495	0.0480	0.0466
25	T. Beryllium (Be)	0.00001	0.00002		0.00001	0.00001	**0.00001**	**0.00001**	**0.00001**	**0.00001**	0.00001	0.00001	0.00001	**0.00001**	0.00001	**0.00001**	0.00001
26	T. Bismuth (Bi)	0.00002	0.00002		0.00002	0.00002	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	0.00002	**0.00002**	0.00002	**0.00002**	0.00002
27	T. Boron (B)	0.155	0.112		0.169	0.0585	0.167	0.169	0.174	0.171	0.0725	0.0710	0.121	0.145	0.167	0.138	0.122
28	T. Cadmium (Cd)	0.00001	0.000015	**0.00001**	0.000005	**0.00002**	0.000005	0.000010	0.000005	0.000010	0.000010	0.000010	0.00001	0.000015	0.000005	0.000015	0.00001
29	T. Calcium (Ca)	86.4	50.5	63.6	83.1	65.2	64.2	66.9	65.1	63.9	67.3	63.1	67.8	71.6	56.1	69.4	65.4
30	T. Chromium (Cr)	0.0002	0.0007		0.0002	0.0004	0.0003	0.0002	0.0001	0.0002	0.0006	0.0004	0.0003	0.0002	0.0005	0.0002	0.0004
31	T. Cobalt (Co)	0.00053	0.00037	0.00028	0.00049	0.00024	0.00041	0.00040	0.00037	0.00037	0.00027	0.00024	0.00037	0.00039	0.00023	0.00038	0.0004
32	T. Copper (Cu)	0.0014	0.0015	0.0028	0.0015	0.0037	0.0012	0.0012	0.0010	0.0011	0.0090	0.0072	0.0019	0.0027	0.0024	0.0017	0.002
33	T. Iron (Fe)	0.12	0.35		0.09	0.18	0.11	0.07	0.05	0.06	0.27	0.20	0.18	0.10	0.19	0.10	0.23
34	T. Lead (Pb)	0.00011	0.0002	0.00014	0.00007	0.00030	0.00009	0.00008	0.00006	0.00006	0.00051	0.00029	0.00012	0.00011	0.00015	0.00011	0.00026
35	T. Lithium (Li)	0.0376	0.0324		0.039	0.0242	0.0434	0.0450	0.0462	0.0466	0.0286	0.0278	0.0384	0.0536	0.0128	0.0506	0.0398
36	T. Magnesium (Mg)	38	33.8	34.7	37.9	35.7	39.1	39.3	38.2	38.5	32.4	33.0	38.8	40.6	25.7	39.7	38.6
37	T. Manganese (Mn)	0.0534	0.0224		0.0422	0.0126	0.0117	0.0109	0.0093	0.0096	0.0180	0.0156	0.0317	0.0367	0.0122	0.0350	0.0318

	A	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM
1	Station	In Pit Sump 4 Discharge42	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge43	WMP Area Excavated Settling Pond Discharge44	In Pit Sump 4 Discharge45	WMP Area Excavated Settling Pond Discharge46	In Pit Sump 3 Discharge47	In Pit Sump 3 Discharge48	In Pit Sump 3 Discharge49	In Pit Sump 3 Discharge50	WMP Area Excavated Settling Pond Discharge51	WMP Area Excavated Settling Pond Discharge52	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge53	In Pit Sump 3 Discharge54	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge55	In Pit Sump 3 Discharge56	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge57
2	Discharge Coordinates (UTM	15U 425836E 5409205N	15U 423937E 5408984N	15U 420510E 5412400N	15U 425836E 5409205N	15U 420510E 5412400N	15U 424982E 5409309N	15U 424982E 5409309N	15U 424982E 5409309N	15U 424982E 5409309N	15U 420510E 5412400N	15U 420510E 5412400N	15U 423937E 5408984N	15U 424982E 5409309N	15U 426637E 5410794N	15U 424982E 5409309N	15U 423937E 5408984N
3	Date Sampled	05-Sep-16	05-Sep-16	05-Sep-16	06-Sep-16	06-Sep-16	09-Sep-16	09-Sep-16	10-Sep-16	10-Sep-16	12-Sep-16	12-Sep-16	16-Sep-16	16-Sep-16	17-Sep-16	17-Sep-16	17-Sep-16
38	T. Mercury (Hg)	0.000002	0.000002		0.000002	0.000002	**0.000002**	**0.000002**	**0.000002**	**0.000002**	**0.000002**	**0.000002**	0.000002	**0.000002**	0.000002	**0.000002**	0.000002
39	T. Molybdenum (Mo)	0.018	0.013		0.018	0.0121	0.0223	0.0217	0.0220	0.0218	0.0129	0.0128	0.0204	0.0326	0.00740	0.0324	0.0204
40	T. Nickel (Ni)	0.0028	0.0016	0.0022	0.0031	0.0021	0.0025	0.0025	0.0023	0.0024	0.0025	0.0022	0.0018	0.0024	0.0012	0.0020	0.0019
41	T. Phosphorus (P)																
42	T. Potassium (K)	10.1	6.5		10.3	3.2	11.3	12.4	11.1	11.6	3.19	3.07	9.96	12.8	5.14	13.2	10.5
43	T. Selenium (Se)	0.001	0.001		0.001	0.0018	0.0010	0.0010	0.0010	0.0010	0.0018	0.0016	0.0012	0.0008	0.0006	0.0010	0.0012
44	T. Silver (Ag)	0.00001	0.00001		0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	**0.00001**	**0.00001**	0.00001	0.00002	0.00001	0.00002	0.00001
45	T. Sodium (Na)	37	22.6		37	9.8	36.1	38.1	35.9	35.8	9.62	9.26	30.1	31.7	11.8	30.5	29.9
46	T. Strontium (Sr)	0.711	0.356		0.693	0.237	0.749	0.728	0.739	0.737	0.260	0.254	0.51	0.738	0.240	0.738	0.523
47	T. Tellurium (Te)	0.00019	0.00009		0.00015	0.00007	0.00006	0.00007	0.00009	0.00008	0.00004	0.00002	0.00007	0.00014	0.00003	0.00010	0.00006
48	T. Thallium (Tl)	0.000028	0.000018		0.00003	0.000006	0.000028	0.000028	0.000026	0.000026	0.000008	0.000006	0.000026	0.000036	0.000014	0.000034	0.000026
49	T. Tin (Sn)	0.00012	0.00008		0.0001	0.00004	0.00002	0.00006	0.00006	0.00008	0.00014	0.00012	0.00006	0.00008	0.00006	0.00010	0.00008
50	T. Titanium (Ti)	0.0031	0.013		0.00215	0.0052	0.00405	0.00240	0.00160	0.00215	0.00755	0.00580	0.00405	0.00220	0.0102	0.00340	0.0074
51	T. Tungsten (W)	0.00076	0.00029		0.0008	0.00001	0.00060	0.00058	0.00058	0.00060	0.00002	0.00001	0.00053	0.00053	0.00005	0.00051	0.00054
52	T. Uranium (U)	0.00215	0.00339		0.00218	0.0076	0.00153	0.00152	0.00151	0.00155	0.00759	0.00714	0.0027	0.00225	0.0149	0.00214	0.00268
53	T. Vanadium (V)	0.0012	0.00235		0.0011	0.0032	0.00155	0.00140	0.00130	0.00130	0.00320	0.00290	0.00165	0.00110	0.00140	0.00115	0.0019
54	T. Zinc (Zn)	0.003	0.0055	0.0015	0.0035	0.0055	0.0055	0.0040	0.0025	0.0025	0.0165	0.0135	0.003	0.0125	0.0045	0.0100	0.0065
55	T. Zirconium (Zr)	0.00018	0.00038		0.00016	0.00036	0.00024	0.00016	0.00018	0.00016	0.00046	0.00054	0.00018	0.00018	0.00036	0.00018	0.00024
56	D. Aluminum (Al)	0.007	0.005		0.007	0.003	0.003	0.003	0.002	0.004	0.003	0.003	0.008	0.004	0.003	0.003	0.008
57	D. Antimony (Sb)	0.0189	0.0114	0.00026	0.0186	0.00026	0.0167	0.0167	0.0165	0.0167	0.00025	0.00025	0.0153	0.0163	0.00024	0.0160	0.0157
58	D. Arsenic (As)	0.00229	0.0016	0.0024	0.00233	0.0025	0.00265	0.00261	0.00261	0.00266	0.00249	0.00246	0.00219	0.00421	0.00103	0.00398	0.0022
59	D. Barium (Ba)	0.0357	0.0418		0.0356	0.0573	0.0448	0.0459	0.0443	0.0449	0.0542	0.0541	0.0452	0.0458	0.0479	0.0451	0.0452
60	D. Beryllium (Be)	0.00001	0.00001		0.00001	0.00001	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	0.00001	**0.00001**	0.00001	**0.00001**	0.00001
61	D. Bismuth (Bi)	0.00002	0.00002		0.00002	0.00002	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	**0.00002**	0.00002	**0.00002**	0.00002	**0.00002**	0.00002
62	D. Boron (B)	0.154	0.11		0.157	0.0545	0.123	0.127	0.125	0.127	0.0525	0.0540	0.11	0.126	0.159	0.132	0.115
63	D. Cadmium (Cd)	0.000005	0.00001	**0.000005**	0.000005	**0.000005**	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.00001	0.000010	0.000005	0.000010	0.00001
64	D. Calcium (Ca)	86.4	50.7	63.1	78.4	63	64.0	66.3	64.4	69.5	66.1	64.9	66.1	68.1	55.1	70.8	65.1
65	D. Chromium (Cr)	0.0001	0.0001		0.0001	0.0001	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	0.0001	**0.0001**	0.0001	**0.0001**	0.0001
66	D. Cobalt (Co)	0.00042	0.00021	0.00016	0.00039	0.00016	0.00031	0.00031	0.00031	0.00032	0.00017	0.00017	0.00027	0.00033	0.00015	0.00032	0.00027
67	D. Copper (Cu)	0.0009	0.0008	0.0026	0.0007	0.0027	0.0007	0.0007	0.0007	0.0008	0.0025	0.0027	0.0012	0.0013	0.0020	0.0013	0.0012
68	D. Iron (Fe)	0.01	0.01		0.01	0.01	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	0.01	**0.01**	0.01	**0.01**	0.01
69	D. Lead (Pb)	0.00001	0.00001	0.00003	0.00001	0.00007	0.00002	0.00001	0.00001	0.00001	0.00002	0.00001	0.00001	0.00002	0.00004	0.00003	0.00002
70	D. Lithium (Li)	0.0378	0.033		0.0384	0.0222	0.0410	0.0410	0.0410	0.0432	0.0254	0.0260	0.0376	0.0504	0.0128	0.0498	0.0382
71	D. Magnesium (Mg)	38.2	35.4	36	38.8	37	37.8	36.8	36.1	37.8	34.7	33.9	37.7	40.9	25.7	39.9	39.1
72	D. Manganese (Mn)	0.0427	0.0149		0.0229	0.0046	0.0063	0.0049	0.0036	0.0038	0.0084	0.0083	0.0219	0.0310	0.0017	0.0298	0.022
73	D. Mercury (Hg)	0.000002	0.000002		0.000002	0.000002	**0.000002**	**0.000002**	**0.000002**	**0.000002**	**0.000002**	**0.000002**	0.000002	**0.000002**	0.000002	**0.000002**	0.000002
74	D. Molybdenum (Mo)	0.0173	0.0127		0.017	0.0113	0.0197	0.0197	0.0194	0.0200	0.0117	0.0119	0.0198	0.0303	0.00734	0.0313	0.0198
75	D. Nickel (Ni)	0.0026	0.0011	0.0018	0.0025	0.0019	0.0021	0.0021	0.0021	0.0020	0.0018	0.0018	0.0016	0.0019	0.0010	0.0019	0.0016
76	D. Potassium (K)	11	6.9		10.9	3.3	11.1	11.1	11.1	10.9	3.06	3.08	10.2	12.9	5.23	12.9	10.1
77	D. Selenium (Se)	0.001	0.001		0.001	0.002	0.0010	0.0010	0.0010	0.0010	0.0020	0.0020	0.0014	0.0010	0.0006	0.0010	0.0012
78	D. Silver (Ag)	0.00001	0.00001		0.00001	0.00001	0.00001	**0.00001**	**0.00001**	0.00001	**0.00001**	**0.00001**	0.00001	0.00002	0.00001	0.00001	0.00001
79	D. Sodium (Na)	36.9	23.5		38.6	8.86	33.9	33.0	33.2	34.3	9.22	9.32	28	30.9	11.7	30.5	28.5
80	D. Strontium (Sr)	0.705	0.376		0.684	0.227	0.648	0.658	0.627	0.659	0.227	0.231	0.508	0.663	0.234	0.674	0.507
81	D. Tellurium (Te)	0.00004	0.00003		0.00004	0.00003	0.00003	0.00004	0.00004	0.00003	0.00002	**0.00001**	0.00002	0.00004	0.00002	0.00002	0.00001
82	D. Thallium (Tl)	0.000028	0.000014		0.000028	0.000004	0.000026	0.000024	0.000026	0.000026	0.000004	0.000004	0.000024	0.000032	0.000008	0.000034	0.000024
83	D. Tin (Sn)	0.00002	0.00002		0.00002	0.00008	**0.00002**	**0.00002**	**0.00002**	0.00004	**0.00002**	**0.00002**	0.00002	**0.00002**	0.00002	**0.00002**	0.00002
84	D. Titanium (Ti)	0.00005	0.00005		0.00005	0.0001	**0.00005**	**0.00005**	**0.00005**	**0.00005**	0.00015	0.00010	0.00005	**0.00005**	0.00005	0.00005	0.00005
85	D. Tungsten (W)	0.00081	0.00031		0.00079	0.00002	0.00059	0.00059	0.00060	0.00060	0.00001	0.00001	0.00053	0.00049	0.00004	0.00049	0.00051
86	D. Uranium (U)	0.00201	0.00306		0.00199	0.00716	0.00154	0.00155	0.00156	0.00159	0.00728	0.00704	0.0026	0.00211	0.0139	0.00209	0.0026
87	D. Vanadium (V)	0.00085	0.00135		0.00085	0.0026	0.00110	0.00105	0.00110	0.00110	0.00240	0.00245	0.00115	0.00075	0.00080	0.00080	0.00115
88	D. Zinc (Zn)	0.002	0.0045	0.001	0.0025	0.0705	0.0055	0.0035	0.0030	0.0035	0.0060	0.0060	0.0015	0.0125	0.0035	0.0095	0.006
89	D. Zirconium (Zr)	0.00004	0.00004		0.00004	0.00018	0.00004	0.00004	0.00004	0.00004	0.00020	0.00020	0.00004	0.00008	0.00008	0.00008	0.00004

	A	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC
1	Station	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge58	In Pit Sump 3 Discharge59	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge60	In Pit Sump 4 Discharge61	Overburden and West Mine Rock Stockpile Sediment Pond 1 Discharge	In Pit Sump 4 Discharge62	In Pit Sump 4 Discharge63	In Pit Sump 3 Discharge64	In Pit Sump 3 Discharge65	Overburden and West Mine Rock Stockpile Sediment Pond 1 Discharge66	WMP Area Excavated Settling Pond Discharge67	In Pit Sump 4 Discharge68	In Pit Sump 4 Discharge69	Overburden and West Mine Rock Stockpile Sediment Pond 1 Discharge70	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge71	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge72
2	Discharge Coordinates (UTM	15U 426637E 5410794N	15U 424982E 5409309N	15U 423937E 5408984N	15U 425836E 5409205N	15U 423937E 5408984N	15U 425836E 5409205N	15U 425836E 5409205N	15U 424982E 5409309N	15U 424982E 5409309N	15U 423937E 5408984N	15U 420510E 5412400N	15U 425836E 5409205N	15U 425836E 5409205N	15U 423937E 5408984N	15U 426327E 5410357N	15U 426327E 5410357N
3	Date Sampled	18-Sep-16	18-Sep-16	18-Sep-16	22-Sep-16	22-Sep-16	23-Sep-16	23-Sep-16	30-Sep-16	01-Oct-16	03-Oct-16	03-Oct-16	04-Oct-16	04-Oct-16	04-Oct-16	11-Oct-16	12-Oct-16
4	pH_Field	8.1	7.89	7.58	6.94	6.8	7.21	7.21	7.41	7.59	7.62	8.32	7.35	7.56	8.18	8.58	7.8
5	Temp_Field	16.9	14.5	15.9	15	14.9	14	14	12.4	13.7	16.4	18.2	14.5	14.4	15.3	10.1	8.76
6	DO_Field	7.76	8.87	7.46	7.16	8.92	8.31	8.93	10.85	11.16	9.53	6.66	7.99	6.17	8.28	9.96	9.48
7	Conductivity	510	835	786	946	657	950	958	900	896	514	538	949	941	529	447	462
8	Hardness	242	343	326	403	289	410	406	327	320	224	285	395	386	222	216	217
9	pH_Lab	8.25	7.96	7.75	7.05	8.15	7.39	7.38	7.78	7.9	7.7	8.34	7.78	7.98	8.26	8.36	8.31
10	TSS	27.5	4.0	6	5	2.5	4.5	4.5	3	3.5	7.5	15	9.5	6.5	18.5	7	7
11	Alkalinity (Total as CaCO3)	180	287	260	286	225	295	290	306	297	178	244	294	295	185	152	154
12	Total Ammonia-N	0.108	7.97	5.93	5.5	3.23	5.46	5.13	11.9	11.1	1.33	0.118	5.22	5.23	1.15	0.202	0.002
13	Ammonia - U	0.004	0.159	0.065	0.013		0.022	0.021	0.068	0.106	0.017	0.008	0.031	0.049	0.047	0.013	0.001
14	Chloride (Cl)	10.0	23.2	23	50.5	23.7	50.9	49.6	25.1	23.4	17.7	3.3	46.1	45.4	15.3	10.2	10.3
15	Nitrate (N)	8.69	12.9	10.7	8.3	10.4	8.36	8.14	17.8	16.6	7.02	1.69	7.69	7.64	6.02	2.47	2.93
16	Nitrite (N)	0.129	0.430	0.497	0.435	0.36	0.431	0.418	0.597	0.543	0.211	0.053	0.33	0.325	0.183	0.035	0.036
17	Orthophosphate (P)																
18	Sulfate (SO4)	52.7	78.6	94.5	131	68.6	131	128	80.5	73.8	50.2	70	134	133	42.5	69.6	71.9
19	Cyanide, Free																
20	Total Cyanide (CN)	**0.001**	0.011	0.003	0.017	0.001	0.013	0.013	0.031	0.027	0.001	0.002	0.015	0.012	**0.001**	0.001	0.001
21	T. Aluminum (Al)	0.568	0.120	0.217	0.369	0.136	0.231	0.22	0.091	0.089	0.201	0.426	0.141	0.194	0.520	0.105	0.222
22	T. Antimony (Sb)	0.00023	0.0157	0.0154	0.0175	0.0107	0.0173	0.0178	0.0155	0.0155	0.00726	0.00025	0.0152	0.0154	0.00702	0.00042	0.00046
23	T. Arsenic (As)	0.0012	0.0040	0.0022	0.0039	0.0021	0.0037	0.0037	0.0035	0.0034	0.0016	0.0023	0.0025	0.0024	0.0017	0.0011	0.0011
24	T. Barium (Ba)	0.0537	0.0463	0.049	0.0425	0.0426	0.0421	0.0411	0.0447	0.044	0.0368	0.0568	0.0402	0.0403	0.0377	0.0448	0.0467
25	T. Beryllium (Be)	0.00002	**0.00001**	0.00001	0.00001	0.00001	0.00001	0.00001	**0.00001**	**0.00001**	0.00001	0.00002	0.00001	0.00001	0.00003	0.00001	0.00001
26	T. Bismuth (Bi)	**0.00002**	**0.00002**	0.00002	0.00002	0.00002	0.00002	0.00002	**0.00002**	**0.00002**	0.00002	0.00002	0.00002	0.00002	**0.00002**	0.00002	0.00002
27	T. Boron (B)	0.162	0.137	0.121	0.149	0.111	0.15	0.149	0.145	0.151	0.0805	0.0525	0.155	0.158	0.0935	0.094	0.11
28	T. Cadmium (Cd)	0.000010	0.000015	0.00001	0.000025	0.00001	0.000025	0.00002	0.000015	0.000015	0.00001	0.000015	0.000015	0.00003	0.000015	0.00001	0.00001
29	T. Calcium (Ca)	57.1	67.9	67.5	91.8	56.8	93.7	92.5	66.2	65.6	43.8	66.1	90.7	88.4	42.3	46.2	48
30	T. Chromium (Cr)	0.0010	0.0002	0.0004	0.0007	0.0003	0.0004	0.0004	0.0001	0.0001	0.0005	0.0008	0.0003	0.0004	0.0011	0.0003	0.0005
31	T. Cobalt (Co)	0.00034	0.00039	0.0004	0.00066	0.00029	0.0006	0.00059	0.00052	0.00052	0.00026	0.0007	0.00065	0.00061	0.00038	0.00017	0.0002
32	T. Copper (Cu)	0.0029	0.0018	0.002	0.0031	0.0016	0.0025	0.0025	0.0019	0.0019	0.002	0.0035	0.0022	0.0019	0.0022	0.0041	0.0042
33	T. Iron (Fe)	0.50	0.11	0.23	0.42	0.14	0.27	0.26	0.09	0.09	0.21	0.5	0.19	0.24	0.59	0.1	0.19
34	T. Lead (Pb)	0.00037	0.00009	0.00013	0.00028	0.00008	0.00023	0.00022	0.00007	0.00007	0.00012	0.00036	0.00002	0.00006	0.00026	0.00006	0.00009
35	T. Lithium (Li)	0.0134	0.0510	0.0396	0.039	0.0316	0.0386	0.0386	0.0506	0.052	0.0232	0.0216	0.0466	0.0414	0.0272	0.0148	0.0164
36	T. Magnesium (Mg)	27.2	42.6	42.2	43.1	35.8	42.3	42	39.7	39.2	28.2	36	41	39.9	27.7	23.4	23.7
37	T. Manganese (Mn)	0.0172	0.0326	0.0304	0.0723	0.0046	0.0724	0.0724	0.0257	0.025	0.0059	0.0554	0.0787	0.0749	0.0126	0.0057	0.0064

	A	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC
1	Station	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge58	In Pit Sump 3 Discharge59	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge60	In Pit Sump 4 Discharge61	Overburden and West Mine Rock Stockpile Sediment Pond 1 Discharge	In Pit Sump 4 Discharge62	In Pit Sump 4 Discharge63	In Pit Sump 3 Discharge64	In Pit Sump 3 Discharge65	Overburden and West Mine Rock Stockpile Sediment Pond 1 Discharge66	WMP Area Excavated Settling Pond Discharge67	In Pit Sump 4 Discharge68	In Pit Sump 4 Discharge69	Overburden and West Mine Rock Stockpile Sediment Pond 1 Discharge70	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge71	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge72
2	Discharge Coordinates (UTM	15U 426637E 5410794N	15U 424982E 5409309N	15U 423937E 5408984N	15U 425836E 5409205N	15U 423937E 5408984N	15U 425836E 5409205N	15U 425836E 5409205N	15U 424982E 5409309N	15U 424982E 5409309N	15U 423937E 5408984N	15U 420510E 5412400N	15U 425836E 5409205N	15U 425836E 5409205N	15U 423937E 5408984N	15U 426327E 5410357N	15U 426327E 5410357N
3	Date Sampled	18-Sep-16	18-Sep-16	18-Sep-16	22-Sep-16	22-Sep-16	23-Sep-16	23-Sep-16	30-Sep-16	01-Oct-16	03-Oct-16	03-Oct-16	04-Oct-16	04-Oct-16	04-Oct-16	11-Oct-16	12-Oct-16
38	T. Mercury (Hg)	**0.000002**	**0.000002**	0.000002	0.000002	0.000002	0.000002	0.000002	**0.000002**	**0.000002**	0.000002	0.000002	0.000002	0.000002	**0.000002**	0.000002	0.000002
39	T. Molybdenum (Mo)	0.00742	0.0316	0.0207	0.0179	0.0176	0.0175	0.0178	0.0298	0.0302	0.0136	0.0108	0.0143	0.0143	0.0135	0.0073	0.00764
40	T. Nickel (Ni)	0.0015	0.0020	0.0019	0.0039	0.0016	0.0036	0.0036	0.0028	0.0027	0.0016	0.0029	0.0046	0.0046	0.0019	0.0017	0.0018
41	T. Phosphorus (P)																
42	T. Potassium (K)	4.96	13.4	10.2	10.7	7.6	10.6	10.9	13.8	13.8	5.77	3.36	10.1	9.91	5.74	4.73	4.73
43	T. Selenium (Se)	0.0006	0.0010	0.0012	0.001	0.0006	0.0008	0.001	0.0008	0.0008	0.0004	0.0014	0.001	0.001	0.0006	0.0014	0.0014
44	T. Silver (Ag)	**0.00001**	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00002	0.00001	0.00001	0.00001
45	T. Sodium (Na)	11.6	32.0	30.6	36.7	25.7	35.5	36	38.9	38.9	18.4	9.5	42.8	41.5	18.7	9.34	9.82
46	T. Strontium (Sr)	0.243	0.716	0.532	0.776	0.42	0.756	0.754	0.669	0.692	0.286	0.231	0.737	0.698	0.291	0.158	0.162
47	T. Tellurium (Te)	0.00003	0.00011	0.00009	0.00018	0.00007	0.00016	0.00015	0.0001	0.00009	0.00006	0.00005	0.00002	0.00002	0.00002	0.00004	0.00002
48	T. Thallium (Tl)	0.000014	0.000034	0.000026	0.000032	0.000016	0.00003	0.00003	0.000028	0.000026	0.000012	0.00001	0.000024	0.000026	0.000014	0.000012	0.00001
49	T. Tin (Sn)	0.00006	0.00002	0.00004	0.00004	0.00002	0.00004	0.00002	0.00002	0.00002	0.00004	0.00004	0.00002	0.00006	0.00004	0.00002	0.00004
50	T. Titanium (Ti)	0.0248	0.00335	0.00675	0.0118	0.0053	0.0077	0.0072	0.0036	0.00315	0.0067	0.0142	0.0058	0.00855	0.0200	0.0042	0.00805
51	T. Tungsten (W)	0.00005	0.00051	0.00054	0.00069	0.00034	0.00065	0.00066	0.00053	0.00054	0.00023	0.00001	0.00058	0.00058	0.00022	0.00006	0.00006
52	T. Uranium (U)	0.0149	0.00218	0.00281	0.00225	0.00261	0.00221	0.00222	0.0013	0.00131	0.00274	0.00606	0.00193	0.00199	0.00287	0.00984	0.0108
53	T. Vanadium (V)	0.00230	0.00115	0.0019	0.00195	0.0017	0.00155	0.0016	0.00105	0.00100	0.0017	0.0033	0.00035	0.0006	0.00290	0.0015	0.00165
54	T. Zinc (Zn)	0.0065	0.0055	0.007	0.0095	0.0005	0.005	0.005	0.0065	0.0045	0.0025	0.0055	0.01	0.0085	0.0035	0.008	0.0065
55	T. Zirconium (Zr)	0.00068	0.00020	0.00022	0.00042	0.00022	0.00042	0.00034	0.00016	0.00016	0.00026	0.00064	0.00058	0.00036	0.00054	0.00026	0.00034
56	D. Aluminum (Al)	0.004	0.004	0.008	0.004	0.004	0.003	0.003	0.002	0.002	0.005	0.002	0.004	0.004	0.005	0.005	0.004
57	D. Antimony (Sb)	0.00023	0.0166	0.0162	0.0175	0.0108	0.0178	0.0181	0.0163	0.0162	0.00717	0.00023	0.0162	0.0157	0.00695	0.00044	0.00044
58	D. Arsenic (As)	0.00101	0.00417	0.00209	0.00353	0.00214	0.00349	0.00347	0.00344	0.00338	0.00156	0.00206	0.00254	0.00247	0.00161	0.00117	0.00113
59	D. Barium (Ba)	0.0494	0.0438	0.0471	0.0397	0.0411	0.04	0.0402	0.0467	0.0456	0.0367	0.0537	0.041	0.0404	0.0375	0.0409	0.0427
60	D. Beryllium (Be)	**0.00001**	**0.00001**	0.00001	0.00001	0.00001	0.00001	0.00001	**0.00001**	**0.00001**	0.00001	0.00001	0.00001	0.00001	**0.00001**	0.00001	0.00001
61	D. Bismuth (Bi)	**0.00002**	**0.00002**	0.00002	0.00002	0.00002	0.00002	0.00002	**0.00002**	**0.00002**	0.00002	0.00002	0.00002	0.00002	**0.00002**	0.00002	0.00002
62	D. Boron (B)	0.160	0.132	0.114	0.143	0.105	0.141	0.143	0.134	0.125	0.0775	0.0505	0.123	0.122	0.0745	0.0935	0.099
63	D. Cadmium (Cd)	**0.000005**	0.000010	0.00001	0.00002	0.00001	0.00002	0.00002	0.000015	0.000015	0.000005	0.00001	0.000015	0.000015	0.000005	0.000005	0.000005
64	D. Calcium (Ca)	53.7	71.1	67.1	94.8	57.7	95.8	95	64.7	64.1	44.8	62.4	95	93	42.2	48	48.6
65	D. Chromium (Cr)	0.0001	**0.0001**	0.0001	0.0001	0.0001	0.0001	0.0001	**0.0001**	**0.0001**	0.0001	0.0001	0.0001	0.0001	**0.0001**	0.0001	0.0001
66	D. Cobalt (Co)	0.00015	0.00030	0.00026	0.00045	0.00021	0.00047	0.00046	0.00048	0.00049	0.00018	0.00044	0.00051	0.00049	0.00017	0.00009	0.0001
67	D. Copper (Cu)	0.0020	0.0013	0.0013	0.002	0.0014	0.0018	0.0018	0.0016	0.0015	0.0014	0.0026	0.0012	0.0011	0.0014	0.0037	0.0036
68	D. Iron (Fe)	**0.01**	**0.01**	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	**0.01**	0.01	0.01
69	D. Lead (Pb)	0.00004	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	**0.00001**	0.00001	0.00001
70	D. Lithium (Li)	0.0126	0.0508	0.0392	0.0396	0.0318	0.0384	0.0396	0.0498	0.0484	0.0232	0.0206	0.038	0.0378	0.0224	0.0146	0.0148
71	D. Magnesium (Mg)	26.1	40.2	38.5	40.3	35.2	41.6	41	40.1	38.7	27.2	31.5	38.2	37.4	28.3	23.3	23.3
72	D. Manganese (Mn)	0.0015	0.0268	0.0199	0.0627	0.0014	0.0661	0.065	0.0245	0.0233	0.0034	0.0351	0.0712	0.0698	0.0042	0.0007	0.0004
73	D. Mercury (Hg)	**0.000002**	**0.000002**	0.000002	0.000002	0.000002	0.000002	0.000002	**0.000002**	**0.000002**	0.000002	0.000002	0.000002	0.000002	**0.000002**	0.000002	0.000002
74	D. Molybdenum (Mo)	0.00726	0.0312	0.0197	0.0179	0.0176	0.0179	0.018	0.0277	0.0272	0.0128	0.0098	0.0137	0.0137	0.0122	0.00698	0.00736
75	D. Nickel (Ni)	0.0010	0.0019	0.0016	0.0032	0.0014	0.0032	0.0032	0.0028	0.0027	0.0011	0.0019	0.0036	0.0035	0.0012	0.0015	0.0014
76	D. Potassium (K)	5.15	13.3	10.2	10.8	7.68	10.6	10.8	13.9	13.8	5.6	2.97	9.37	9.39	5.49	4.91	4.86
77	D. Selenium (Se)	0.0006	0.0010	0.0012	0.001	0.0006	0.001	0.001	0.0008	0.0008	0.0006	0.0014	0.0012	0.0012	0.0006	0.0016	0.0016
78	D. Silver (Ag)	**0.00001**	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	**0.00001**	**0.00001**	0.00001	0.00001	0.00001	0.00001	**0.00001**	0.00001	0.00001
79	D. Sodium (Na)	12.1	32.3	29.7	34.4	25	34.5	33.8	38.1	38	18	8.42	40.6	40.2	19.5	8.96	9.06
80	D. Strontium (Sr)	0.232	0.697	0.498	0.715	0.394	0.725	0.718	0.65	0.643	0.277	0.212	0.714	0.694	0.275	0.151	0.157
81	D. Tellurium (Te)	0.00001	0.00002	0.00003	0.00004	0.00004	0.00004	0.00005	0.00005	0.00005	0.00001	0.00001	0.00003	0.00003	0.00002	0.00001	0.00002
82	D. Thallium (Tl)	0.000006	0.000034	0.000024	0.000026	0.000012	0.000028	0.000028	0.000026	0.00003	0.000014	0.000006	0.00002	0.00002	0.000006	0.000006	0.000006
83	D. Tin (Sn)	**0.00002**	**0.00002**	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	**0.00002**	0.00002	0.00002
84	D. Titanium (Ti)	0.00005	0.00005	0.00005	0.00005	0.0001	0.00005	0.00005	0.00005	0.00005	0.0004	0.00025	0.00005	0.00005	0.00040	0.0003	0.00015
85	D. Tungsten (W)	0.00004	0.00048	0.00049	0.00071	0.00035	0.00073	0.00072	0.00051	0.00051	0.00024	0.00001	0.00058	0.00057	0.00022	0.00006	0.00006
86	D. Uranium (U)	0.0143	0.00209	0.00262	0.00215	0.00257	0.00223	0.00222	0.00124	0.00124	0.00259	0.00573	0.0018	0.00175	0.00255	0.0091	0.0104
87	D. Vanadium (V)	0.00080	0.00080	0.0011	0.00085	0.00125	0.00085	0.0008	0.0007	0.0007	0.00125	0.00185	0.0006	0.0006	0.00130	0.00115	0.00105
88	D. Zinc (Zn)	0.0035	0.0195	0.0055	0.0105	0.0085	0.0055	0.0055	0.0065	0.0045	0.0055	0.004	0.0065	0.0055	0.0020	0.006	0.0055
89	D. Zirconium (Zr)	0.00006	0.00008	0.00004	0.00006	0.00006	0.00006	0.00006	0.00006	0.00004	0.00014	0.0002	0.00004	0.00004	0.00012	0.0001	0.00008

	A	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS
1	Station	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge73	In Pit Sump 4 Discharge74	In Pit Sump 3 Discharge75	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge76	In Pit Sump 3 Discharge77	In Pit Sump 3 Discharge78	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge79	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge80	Overburden and West Mine Rock Stockpile Sediment Pond 1 Discharge81	Overburden and West Mine Rock Stockpile Sediment Pond 1 Discharge82	In Pit Sump 3 Discharge83	In Pit Sump 3 Discharge84	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge85	In Pit Sump 3 Discharge86	In Pit Sump 4 Discharge87	In Pit Sump 3 Discharge88
2	Discharge Coordinates (UTM	15U 426327E 5410357N	15U 425836E 5409205N	15U 424982E 5409309N	15U 426637E 5410794N	15U 424982E 5409309N	15U 424982E 5409309N	15U 423937E 5408984N	15U 423937E 5408984N	15U 423937E 5408984N	15U 423937E 5408984N	15U 424982E 5409309N	15U 424982E 5409309N	15U 423937E 5408984N	15U 424982E 5409309N	15U 425836E 5409205N	15U 424982E 5409309N
3	Date Sampled	13-Oct-16	13-Oct-16	15-Oct-16	16-Oct-16	16-Oct-16	16-Oct-16	17-Oct-16	18-Oct-16	21-Oct-16	21-Oct-16	28-Oct-16	28-Oct-16	28-Oct-16	29-Oct-16	06-Nov-16	08-Nov-16
4	pH_Field	8.49	7.69	7.71	8.43	8.03	7.85	7.22	7.42	8.4	8.6	8.3	8.17	7.24	7.24	7.51	7.26
5	Temp_Field	7.2	7	10.2	8.8	9.3	8.4	8.8	8.3	4.4	5.9	6.55	6.55	6.55	6.99	6.46	8.88
6	DO_Field	10.7	10.46	8.05	9.15	8.77	9.34	6.31	6.27	7.46	7.46	8	8.34	8.19	7.7	7.68	11.27
7	Conductivity	460	941	782	513	779	784	858	864	502	503	837	838	836	866	889	914
8	Hardness	212	394	333	253	354	355	376	386	225	224	365	366	367	367	380	408
9	pH_Lab	8.38	7.95	7.78	8.38	8.2	8.13	7.57	7.64	8.35	8.38	8.08	8.1	7.17	7.09	7.26	7.96
10	TSS	5	3	19.5	7.5	21	8.5	8	6	6.5	4.5	7.5	10.5	3	7.5	5	3.5
11	Alkalinity (Total as CaCO3)	155	336	303	177	309	307	320	317	176	172	335	333	343	333	380	406
12	Total Ammonia-N	0.002	7.99	4.74	0.02	4.76	4.67	5.67	5.84	0.29	0.224	4.78	4.53	3.83	4.5	5.93	5.17
13	Ammonia - U	0.001	0.057	0.045	0.001	0.088	0.054	0.016	0.025	0.008	0.011	0.131	0.093	0.009	0.011	0.027	0.016
14	Chloride (Cl)	10.5	30.4	21.6	10.2	21.5	21.6	26.4	25.9	17.4	14.2	26.6	26.9	20	27.1	38.2	40
15	Nitrate (N)	3	8.64	6.74	8.95	6.73	6.75	9.72	9.71	6.61	5.59	6.82	6.9	6.64	6.87	7.91	6.75
16	Nitrite (N)	0.041	0.28	0.165	0.089	0.161	0.163	0.269	0.267	0.119		0.143	0.143	0.157	0.142	0.169	0.23
17	Orthophosphate (P)																
18	Sulfate (SO4)	73	93.8	84.0	62.4	84.1	84.2	93	93.2	50.7	42.3	74.1	74.5	73.7	75.4	83.9	85.3
19	Cyanide, Free																
20	Total Cyanide (CN)	0.001	0.014	0.004	0.001	0.004	0.004	0.01	0.009	0.001	0.001	0.004	0.004	0.003	0.004	0.004	0.006
21	T. Aluminum (Al)	0.131	0.152	0.188	0.173	0.405	0.098	0.129	0.107	0.288	0.119	0.138	0.156	0.044	0.185	0.0825	0.135
22	T. Antimony (Sb)	0.00043	0.0163	0.0102	0.00029	0.0105	0.0102	0.0132	0.0136	0.00615	0.00607	0.0157	0.0158	0.0104	0.0155	0.0196	0.0159
23	T. Arsenic (As)	0.0012	0.002	0.0024	0.0011	0.0025	0.0024	0.0024	0.0024	0.0012	0.0011	0.0025	0.0026	0.0027	0.0025	0.0026	0.0025
24	T. Barium (Ba)	0.0434	0.0377	0.0528	0.0493	0.0568	0.0517	0.0583	0.0603	0.0336	0.0307	0.045	0.0452	0.0595	0.0465	0.0342	0.0435
25	T. Beryllium (Be)	0.00001	0.00001	**0.00001**	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
26	T. Bismuth (Bi)	0.00002	0.00002	**0.00002**	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
27	T. Boron (B)	0.115	0.13	0.119	0.176	0.119	0.116	0.125	0.127	0.0805	0.0815	0.121	0.123	0.121	0.122	0.137	0.143
28	T. Cadmium (Cd)	0.00001	0.00001	0.000015	0.00001	0.000015	0.00001	0.000015	0.000015	0.00001	0.000005	0.000015	0.000015	0.000015	0.000015	0.000005	0.000015
29	T. Calcium (Ca)	45	88.5	71.2	55.6	75.3	72.2	80.1	86.2	40.3	38.3	76.9	78.2	84.1	77	89	93.5
30	T. Chromium (Cr)	0.0004	0.0003	0.0004	0.0005	0.0008	0.0002	0.0003	0.0002	0.0006	0.0003	0.0003	0.0003	0.0001	0.0004	0.0002	0.0003
31	T. Cobalt (Co)	0.00017	0.0005	0.00040	0.00023	0.00049	0.00036	0.00047	0.00044	0.0003	0.00021	0.00033	0.00036	0.00029	0.00035	0.00037	0.00041
32	T. Copper (Cu)	0.0042	0.0012	0.0010	0.0025	0.0012	0.0008	0.0015	0.0014	0.002	0.0017	0.0017	0.0018	0.001	0.0017	0.0007	0.0014
33	T. Iron (Fe)	0.13	0.19	0.21	0.2	0.46	0.12	0.23	0.15	0.34	0.13	0.15	0.16	0.21	0.17	0.09	0.15
34	T. Lead (Pb)	0.00006	0.00006	0.00016	0.0001	0.00025	0.00011	0.00012	0.00015	0.00017	0.00006	0.00012	0.00015	0.00012	0.00016	0.00007	0.00017
35	T. Lithium (Li)	0.017	0.0536	0.0406	0.0142	0.046	0.0458	0.044	0.0436	0.0254	0.0258	0.0394	0.04	0.0402	0.0396	0.0428	0.042
36	T. Magnesium (Mg)	24.5	40.6	38.8	26.2	42.1	40.4	39.1	41.1	29.6	29.5	39.5	41.3	42.1	41.6	41.6	43.4
37	T. Manganese (Mn)	0.0049	0.0825	0.0303	0.0124	0.0304	0.0266	0.0695	0.0683	0.02	0.0082	0.0547	0.0563	0.0641	0.0594	0.037	0.0641

	A	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS
1	Station	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge73	In Pit Sump 4 Discharge74	In Pit Sump 3 Discharge75	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge76	In Pit Sump 3 Discharge77	In Pit Sump 3 Discharge78	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge79	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge80	Overburden and West Mine Rock Stockpile Sediment Pond 1 Discharge81	Overburden and West Mine Rock Stockpile Sediment Pond 1 Discharge82	In Pit Sump 3 Discharge83	In Pit Sump 3 Discharge84	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge85	In Pit Sump 3 Discharge86	In Pit Sump 4 Discharge87	In Pit Sump 3 Discharge88
2	Discharge Coordinates (UTM	15U 426327E 5410357N	15U 425836E 5409205N	15U 424982E 5409309N	15U 426637E 5410794N	15U 424982E 5409309N	15U 424982E 5409309N	15U 423937E 5408984N	15U 423937E 5408984N	15U 423937E 5408984N	15U 423937E 5408984N	15U 424982E 5409309N	15U 424982E 5409309N	15U 423937E 5408984N	15U 424982E 5409309N	15U 425836E 5409205N	15U 424982E 5409309N
3	Date Sampled	13-Oct-16	13-Oct-16	15-Oct-16	16-Oct-16	16-Oct-16	16-Oct-16	17-Oct-16	18-Oct-16	21-Oct-16	21-Oct-16	28-Oct-16	28-Oct-16	28-Oct-16	29-Oct-16	06-Nov-16	08-Nov-16
38	T. Mercury (Hg)	0.000002	0.000002	**0.000002**	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002
39	T. Molybdenum (Mo)	0.0076	0.0194	0.0139	0.00808	0.0145	0.0141	0.021	0.021	0.0141	0.0132	0.014	0.014	0.0154	0.0137	0.0172	0.0157
40	T. Nickel (Ni)	0.0017	0.0037	0.0025	0.0012	0.0026	0.0023	0.0031	0.0031	0.0017	0.0014	0.0038	0.004	0.0024	0.0039	0.0049	0.0047
41	T. Phosphorus (P)																
42	T. Potassium (K)	5.06	10.1	8.52	5.09	8.73	8.65	9.26	9.58	4.83	5.02	8.12	8.1	7.65	8.37	8.17	9.69
43	T. Selenium (Se)	0.0014	0.001	0.0012	0.0008	0.0012	0.001	0.001	0.0012	0.0004	0.0004	0.0008	0.0008	0.001	0.0008	0.0008	0.0008
44	T. Silver (Ag)	0.00001	0.00001	**0.00001**	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00004	0.00001	0.00001
45	T. Sodium (Na)	10	37.3	30.3	13.2	31.1	31.3	34.8	34.2	20.4	20.8	31.4	32.9	29.2	32.1	34.5	36.7
46	T. Strontium (Sr)	0.161	0.627	0.503	0.252	0.582	0.554	0.548	0.583	0.268	0.255	0.54	0.555	0.535	0.544	0.63	0.689
47	T. Tellurium (Te)	0.00002	0.00012	0.00007	0.00005	0.00007	0.00009	0.00004	0.00011	0.00005	0.00008	0.00015	0.00011	0.00013	0.00012	0.00012	0.00017
48	T. Thallium (Tl)	0.00001	0.00002	0.000018	0.000008	0.00002	0.000016	0.00002	0.00002	0.000004	0.000002	0.000024	0.000022	0.000018	0.000024	0.000026	0.000026
49	T. Tin (Sn)	0.00002	0.00002	0.00004	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00008	0.00002	0.00004	0.00002	0.00002
50	T. Titanium (Ti)	0.0051	0.00535	0.00745	0.0072	0.0145	0.0032	0.00355	0.00285	0.0096	0.004	0.0046	0.0055	0.00105	0.0058	0.00295	0.0043
51	T. Tungsten (W)	0.00006	0.00076	0.00046	0.00005	0.00043	0.00044	0.0005	0.00056	0.00022	0.00022	0.00055	0.00054	0.00147	0.00051	0.00068	0.00081
52	T. Uranium (U)	0.0113	0.00123	0.00141	0.0164	0.00146	0.00138	0.00215	0.00212	0.0034	0.00322	0.00145	0.0015	0.00197	0.00145	0.00154	0.00172
53	T. Vanadium (V)	0.0015	0.0009	0.00120	0.00125	0.00175	0.0009	0.00105	0.0009	0.00175	0.00125	0.00115	0.0012	0.00075	0.00125	0.0009	0.0012
54	T. Zinc (Zn)	0.006	0.003	0.0065	0.0045	0.0045	0.0035	0.0055	0.0255	0.002	0.001	0.0035	0.004	0.0075	0.015	0.005	0.011
55	T. Zirconium (Zr)	0.00022	0.00016	0.00030	0.00032	0.00038	0.00022	0.0002	0.00018	0.00036	0.00016	0.00028	0.00028	0.00012	0.0003	0.00014	0.00034
56	D. Aluminum (Al)	0.004	0.004	0.002	0.003	0.002	0.002	0.003	0.004	0.005	0.007	0.002	0.002	0.002	0.002	0.003	0.003
57	D. Antimony (Sb)	0.00044	0.0158	0.0109	0.00028	0.0111	0.0112	0.0139	0.0143	0.00648	0.00653	0.0157	0.0162	0.0104	0.0158	0.0202	0.0172
58	D. Arsenic (As)	0.00113	0.00204	0.00228	0.00099	0.0022	0.00225	0.00216	0.00221	0.0011	0.0011	0.0024	0.00229	0.00187	0.00235	0.00271	0.00258
59	D. Barium (Ba)	0.0424	0.0356	0.0537	0.048	0.0496	0.0488	0.0539	0.0605	0.0312	0.0301	0.0437	0.0438	0.0597	0.0467	0.0349	0.0454
60	D. Beryllium (Be)	0.00001	0.00001	**0.00001**	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
61	D. Bismuth (Bi)	0.00002	0.00002	**0.00002**	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
62	D. Boron (B)	0.0975	0.112	0.126	0.168	0.114	0.115	0.117	0.121	0.0785	0.0745	0.111	0.111	0.107	0.109	0.121	0.136
63	D. Cadmium (Cd)	0.000005	0.00001	0.000005	0.000005	0.00001	0.00001	0.00002	0.000015	0.00001	0.00001	0.00001	0.00001	0.00001	0.000015	0.00001	0.000015
64	D. Calcium (Ca)	46.8	92.5	71.4	56.1	72.4	72.3	82.1	85.1	39.6	39.9	78.2	79.2	82.3	79.4	84.4	92.7
65	D. Chromium (Cr)	0.0001	0.0001	**0.0001**	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
66	D. Cobalt (Co)	0.0001	0.00043	0.00028	0.00018	0.00029	0.0003	0.00036	0.00037	0.00017	0.00016	0.00026	0.00027	0.00025	0.00027	0.00031	0.00035
67	D. Copper (Cu)	0.0036	0.0007	0.0006	0.0022	0.0006	0.0006	0.0011	0.001	0.0014	0.0015	0.0013	0.0013	0.0008	0.0012	0.0006	0.0011
68	D. Iron (Fe)	0.01	0.01	**0.01**	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.01	0.01	0.01
69	D. Lead (Pb)	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00005	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00001	0.00004
70	D. Lithium (Li)	0.0148	0.0482	0.0418	0.0132	0.0434	0.0438	0.0422	0.0428	0.0254	0.0236	0.0416	0.0418	0.0414	0.0408	0.0374	0.04
71	D. Magnesium (Mg)	23	39.6	37.7	27.5	42	42.3	41.5	42.2	30.6	30.2	41.1	40.8	39.3	41	41	42.9
72	D. Manganese (Mn)	0.0006	0.0791	0.0201	0.0054	0.0184	0.0209	0.0659	0.0667	0.0145	0.0054	0.0495	0.0489	0.0567	0.0534	0.0357	0.0593
73	D. Mercury (Hg)	0.000002	0.000002	**0.000002**	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002
74	D. Molybdenum (Mo)	0.00746	0.0189	0.0142	0.00778	0.0143	0.0141	0.0202	0.0207	0.013	0.0132	0.0137	0.0136	0.0143	0.0133	0.0171	0.0158
75	D. Nickel (Ni)	0.0015	0.0034	0.0020	0.0011	0.002	0.0021	0.0027	0.0028	0.0012	0.0012	0.0035	0.0036	0.0022	0.0037	0.0049	0.0045
76	D. Potassium (K)	4.9	10.3	7.89	5.17	8.4	8.89	9.75	9.62	5.22	5	8.39	8.42	7.5	8.46	8.61	9.86
77	D. Selenium (Se)	0.0016	0.001	0.0014	0.0008	0.0012	0.0012	0.001	0.0012	0.0004	0.0006	0.0008	0.0008	0.001	0.0008	0.001	0.0008
78	D. Silver (Ag)	0.00001	0.00001	**0.00001**	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
79	D. Sodium (Na)	9.4	36.4	30.5	14	32.8	33.4	35.5	36.4	20.5	20.7	32.9	32.7	28	32.8	36	37.1
80	D. Strontium (Sr)	0.157	0.618	0.511	0.237	0.524	0.525	0.555	0.554	0.253	0.257	0.546	0.542	0.517	0.544	0.624	0.677
81	D. Tellurium (Te)	0.00002	0.00003	0.00003	0.00002	0.00003	0.00004	0.00003	0.00002	0.00003	0.00002	0.00003	0.00004	0.00004	0.00003	0.00005	0.00004
82	D. Thallium (Tl)	0.000006	0.000016	0.000020	0.000006	0.000014	0.000014	0.000018	0.000018	0.000004	0.000004	0.000022	0.00002	0.000018	0.000022	0.000024	0.000026
83	D. Tin (Sn)	0.00002	0.00002	**0.00002**	0.00002	0.00002	0.00002	0.00002	0.00004	0.00002	0.00004	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
84	D. Titanium (Ti)	0.0001	0.00005	0.00005	0.00005	0.00005	0.0001	0.00005	0.0001	0.0002	0.0001	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
85	D. Tungsten (W)	0.00006	0.00075	0.00052	0.00005	0.00051	0.00053	0.00059	0.00058	0.00023	0.00024	0.00059	0.00058	0.00142	0.00055	0.00071	0.00091
86	D. Uranium (U)	0.0103	0.00117	0.00141	0.0173	0.00138	0.00142	0.00207	0.00209	0.00324	0.00316	0.0015	0.00151	0.00198	0.00148	0.00151	0.00167
87	D. Vanadium (V)	0.00105	0.00045	0.00055	0.00095	0.00055	0.00055	0.00055	0.00055	0.00095	0.0009	0.0007	0.00065	0.00045	0.0007	0.00065	0.0007
88	D. Zinc (Zn)	0.005	0.002	0.0050	0.033	0.003	0.0105	0.0055	0.0275	0.0025	0.001	0.003	0.0025	0.01	0.0155	0.005	0.0115
89	D. Zirconium (Zr)	0.00008	0.00002	0.00004	0.00008	0.00004	0.00004	0.00004	0.00004	0.00008	0.00006	0.00004	0.00006	0.00006	0.00006	0.00004	0.00008

	A	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI
1	Station	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge89	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge90	In Pit Sump 4 Discharge91	In Pit Sump 4 Discharge92	In Pit Sump 3 Discharge93	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge94	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge95	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge96	Preliminary Phase Mine Rock Pond Discharge (Process Plant Overburden Pile)97	In Pit Sump 3 Discharge98	Preliminary Phase Mine Rock Pond Discharge (Process Plant Overburden Pile)99	Process Plant and Crusher Area Temporary Sediment Ponds (North Runoff Pond) Discharge100	Process Plant and Crusher Area Temporary Sediment Ponds (North Runoff Pond) Discharge101	In Pit Sump 4 Discharge102	In Pit Sump 4 Discharge103	In Pit Sump 4 Discharge104
2	Discharge Coordinates (UTM	15U 423937E 5408984N	15U 423937E 5408984N	15U 425836E 5409205N	15U 425836E 5409205N	15U 424982E 5409309N	15U 423937E 5408984N	15U 423937E 5408984N	15U 426637E 5410794N	15U 427118E 5409012N	15U 424982E 5409309N	15U 427118E 5409012N	15U 426388E 5411267N	15U 426388E 5411267N	15U 425836E 5409205N	15U 425836E 5409205N	15U 425836E 5409205N
3	Date Sampled	11-Nov-16	12-Nov-16	16-Nov-16	17-Nov-16	21-Nov-16	21-Nov-16	21-Nov-16	23-Nov-16	23-Nov-16	23-Nov-16	25-Nov-16	27-Nov-16	28-Nov-16	02-Dec-16	02-Dec-16	03-Dec-16
4	pH_Field	6.83	6.86	6.88	7.03	7.23	6.92	6.91	8.1	8.13	7.11	8.45	8.21	8.16	7.21	7.5	7.39
5	Temp_Field	7.01	6.46	5.35	4.81	2.13	2.28	2.3	2.5	2.89	2.21	3.29	2.4	2.8	2.5	2.6	1.9
6	DO_Field	8.46	8.84	6.52	6.91	10.1	3.83	6.37	6.81	7.05	9.79	7.946	12.74	12.32	12.75	12.94	13.34
7	Conductivity	869	876	910	903	899	931	930	575	623	896	621	477	549	901	903	915
8	Hardness	395	398	419	418	348	389	401	258	286	343	314	214	211	390	391	399
9	pH_Lab	7.24	7.36	7.27	7.47	7.43	7.2	7.15	8.19	8.05	7.48	8.01	7.88	7.79	7.4	7.51	7.53
10	TSS	7.5	11.5	6.5	6.5	8	7.5	3.5	46	3.5	9.5	2	3.5	16.5	4	3.5	2.5
11	Alkalinity (Total as CaCO3)	346	347	347	345	305	367	362	177	131	311	132	128	157	343	346	345
12	Total Ammonia-N	4.46	4.41	5.2	5.21	4.95	4.35	5.01	0.13	0.01	4.18	0.024	0.132	0.134	4.55	4.59	4.63
13	Ammonia - U	0.004	0.004	0.005	0.007	0.008	0.004	0.004	0.002	0.001	0.005	0.001	0.002	0.002	0.007	0.015	0.011
14	Chloride (Cl)	29.2	29	42.9	43.1	42.9	34.7	35.4	11	9.76	42.4	10.2	14	16	46.9	46.1	46.5
15	Nitrate (N)	6.79	6.75	6.66	6.98	7.57	6.75	6.77	11.3	1.69	8	1.32	2.51	4.46	5.38	5.34	5.39
16	Nitrite (N)	0.211	0.218	0.247	0.25	0.172	0.223	0.224	0.116	0.011	0.176	0.013	0.067	0.085	0.206	0.204	0.204
17	Orthophosphate (P)																
18	Sulfate (SO4)	81.5	81.5	80.6	81.2	90.1	79.2	79.3	77.5	176	88.1	179	93.6	100	79.1	78.4	78.9
19	Cyanide, Free																
20	Total Cyanide (CN)	0.009	0.008	0.01	0.009	0.003	0.008	0.008	0.0002	0.0004	0.0038	0.001	0.001	0.001	0.019	0.019	0.018
21	T. Aluminum (Al)	0.072	0.12	0.269	0.172	0.111	0.084	0.0805	0.31	0.028	0.122	0.019	0.231	0.285	0.104	0.16	0.091
22	T. Antimony (Sb)	0.0108	0.0102	0.0154	0.0154	0.0168	0.0122	0.0118	0.0003	0.00027	0.0167	0.00031	0.00027	0.00027	0.0148	0.0151	0.0143
23	T. Arsenic (As)	0.002	0.002	0.003	0.0028	0.0024	0.002	0.002	0.001	0.0014	0.0024	0.0014	0.0007	0.0007	0.0027	0.0028	0.0026
24	T. Barium (Ba)	0.0493	0.0499	0.0373	0.035	0.0471	0.0402	0.0406	0.0522	0.0591	0.0462	0.0618	0.0367	0.0367	0.0355	0.0348	0.034
25	T. Beryllium (Be)	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
26	T. Bismuth (Bi)	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
27	T. Boron (B)	0.122	0.12	0.147	0.145	0.148	0.131	0.122	0.189	0.0485	0.132	0.047	0.127	0.128	0.13	0.13	0.128
28	T. Cadmium (Cd)	0.000015	0.000015	0.000015	0.00002	0.00001	0.000015	0.000015	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000015	0.000015	0.000015
29	T. Calcium (Ca)	84.7	80.1	78.4	84.1	71.8	88	89.1	68.8	66.1	74.5	65.3	44	44.3	88.2	87	84.3
30	T. Chromium (Cr)	0.0002	0.0003	0.0005	0.0004	0.0002	0.0002	0.0002	0.0007	0.0002	0.0003	0.0036	0.0031	0.0061	0.0002	0.0003	0.0002
31	T. Cobalt (Co)	0.00034	0.00037	0.00044	0.0004	0.0003	0.00036	0.00037	0.0004	0.00014	0.00029	0.00017	0.00033	0.0004	0.00043	0.00043	0.00039
32	T. Copper (Cu)	0.0011	0.0013	0.0018	0.0016	0.0007	0.0009	0.0007	0.0033	0.0022	0.0008	0.0024	0.0023	0.0024	0.0018	0.0017	0.0016
33	T. Iron (Fe)	0.11	0.16	0.36	0.23	0.12	0.1	0.1	0.45	0.03	0.12	0.03	0.37	0.45	0.14	0.15	0.09
34	T. Lead (Pb)	0.00011	0.00013	0.00013	0.00013	0.0001	0.00007	0.00008	0.0002	0.00003	0.0001	0.00004	0.00017	0.00019	0.0001	0.00009	0.00006
35	T. Lithium (Li)	0.0398	0.0378	0.0408	0.041	0.0442	0.0418	0.0416	0.0158	0.0144	0.0418	0.0168	0.0246	0.0252	0.0358	0.0356	0.0358
36	T. Magnesium (Mg)	38.9	39.2	39.9	39.5	43.3	38	40.3	27.4	33.5	44.7	34.2	25.9	26.3	42.1	42.2	42
37	T. Manganese (Mn)	0.0647	0.0658	0.0712	0.0682	0.0082	0.0774	0.0792	0.0537	0.0091	0.0081	0.009	0.0488	0.0494	0.0822	0.0819	0.0776

	A	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI
1	Station	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge89	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge90	In Pit Sump 4 Discharge91	In Pit Sump 4 Discharge92	In Pit Sump 3 Discharge93	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge94	Overburden and West Mine Rock Stockpile Sediment Pond 2 Discharge95	Process Plant and Crusher Area Temporary Sediment Ponds (Polishing Pond) Discharge96	Preliminary Phase Mine Rock Pond Discharge (Process Plant Overburden Pile)97	In Pit Sump 3 Discharge98	Preliminary Phase Mine Rock Pond Discharge (Process Plant Overburden Pile)99	Process Plant and Crusher Area Temporary Sediment Ponds (North Runoff Pond) Discharge100	Process Plant and Crusher Area Temporary Sediment Ponds (North Runoff Pond) Discharge101	In Pit Sump 4 Discharge102	In Pit Sump 4 Discharge103	In Pit Sump 4 Discharge104
2	Discharge Coordinates (UTM	15U 423937E 5408984N	15U 423937E 5408984N	15U 425836E 5409205N	15U 425836E 5409205N	15U 424982E 5409309N	15U 423937E 5408984N	15U 423937E 5408984N	15U 426637E 5410794N	15U 427118E 5409012N	15U 424982E 5409309N	15U 427118E 5409012N	15U 426388E 5411267N	15U 426388E 5411267N	15U 425836E 5409205N	15U 425836E 5409205N	15U 425836E 5409205N
3	Date Sampled	11-Nov-16	12-Nov-16	16-Nov-16	17-Nov-16	21-Nov-16	21-Nov-16	21-Nov-16	23-Nov-16	23-Nov-16	23-Nov-16	25-Nov-16	27-Nov-16	28-Nov-16	02-Dec-16	02-Dec-16	03-Dec-16
38	T. Mercury (Hg)	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002
39	T. Molybdenum (Mo)	0.0148	0.0142	0.0194	0.0194	0.0167	0.0182	0.0177	0.0085	0.00864	0.0164	0.00836	0.0102	0.0103	0.0175	0.017	0.0168
40	T. Nickel (Ni)	0.0034	0.0036	0.0041	0.004	0.0039	0.0029	0.0031	0.0027	0.0013	0.0039	0.0033	0.0043	0.0063	0.0041	0.004	0.0038
41	T. Phosphorus (P)																
42	T. Potassium (K)	9.29	9.36	10.6	10.5	10.4	10.5	10.7	5.6	3.58	10.2	3.48	4.03	3.99	11	10.8	10.8
43	T. Selenium (Se)	0.0008	0.0008	0.0006	0.0006	0.0008	0.0006	0.0006	0.0008	0.0024	0.0008	0.0024	0.0012	0.0012	0.0006	0.0006	0.0006
44	T. Silver (Ag)	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
45	T. Sodium (Na)	33.7	34.6	38.9	37.7	42.9	34.2	36.3	15.5	12.1	45.7	11.7	13.7	13.5	38	38.4	37.1
46	T. Strontium (Sr)	0.563	0.535	0.646	0.664	0.656	0.606	0.594	0.284	0.224	0.633	0.231	0.213	0.213	0.66	0.628	0.623
47	T. Tellurium (Te)	0.00009	0.00009	0.00008	0.00012	0.00011	0.00011	0.00012	0.00007	0.00004	0.00012	0.00005	0.00004	0.00003	0.00013	0.00015	0.00012
48	T. Thallium (Tl)	0.000024	0.000022	0.000024	0.000024	0.000024	0.000022	0.000022	0.000012	0.000002	0.000022	0.000004	0.000008	0.00001	0.000026	0.000026	0.000022
49	T. Tin (Sn)	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00004	0.00002	0.00004	0.00002	0.00004	0.00004	0.00002	0.00002	0.00002
50	T. Titanium (Ti)	0.00235	0.00405	0.00825	0.0056	0.0043	0.00265	0.0024	0.0121	0.0009	0.00455	0.00075	0.00835	0.0101	0.004	0.0056	0.00295
51	T. Tungsten (W)	0.00123	0.00109	0.00076	0.00075	0.00078	0.00097	0.00102	0.00006	0.00002	0.00075	0.00002	0.00003	0.00003	0.00075	0.00074	0.0007
52	T. Uranium (U)	0.00189	0.0018	0.00136	0.00139	0.00183	0.00171	0.00172	0.0195	0.00409	0.00174	0.00452	0.00909	0.00917	0.00145	0.00144	0.00137
53	T. Vanadium (V)	0.0008	0.00095	0.0016	0.00135	0.0012	0.00115	0.0012	0.00155	0.00135	0.00115	0.00135	0.00105	0.00125	0.00095	0.001	0.00085
54	T. Zinc (Zn)	0.006	0.0045	0.006	0.0045	0.0105	0.0045	0.0045	0.0085	0.002	0.0115	0.0025	0.0115	0.0085	0.011	0.007	0.0055
55	T. Zirconium (Zr)	0.00016	0.0002	0.0002	0.00022	0.00022	0.00016	0.00012	0.00046	0.00008	0.00022	0.00008	0.00034	0.00038	0.00022	0.0002	0.00016
56	D. Aluminum (Al)	0.003	0.003	0.004	0.004	0.001	0.003	0.003	0.001	0.001	0.001	0.002	0.002	0.003	0.004	0.004	0.004
57	D. Antimony (Sb)	0.0115	0.0114	0.0163	0.0161	0.0176	0.0125	0.0123	0.00029	0.00027	0.0178	0.00031	0.00027	0.00026	0.0147	0.0147	0.0156
58	D. Arsenic (As)	0.00192	0.00192	0.00279	0.0028	0.00241	0.00212	0.00208	0.00083	0.00128	0.00247	0.00131	0.0006	0.00057	0.00276	0.00273	0.00287
59	D. Barium (Ba)	0.0506	0.0511	0.0382	0.0369	0.047	0.0441	0.0452	0.05	0.0578	0.0461	0.0633	0.0348	0.0331	0.0343	0.0333	0.0348
60	D. Beryllium (Be)	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00005	0.00001	0.00001	0.00001	0.00001	0.00001
61	D. Bismuth (Bi)	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
62	D. Boron (B)	0.138	0.142	0.124	0.125	0.144	0.13	0.126	0.174	0.0485	0.139	0.0445	0.121	0.129	0.131	0.125	0.123
63	D. Cadmium (Cd)	0.000015	0.000015	0.000015	0.000015	0.00001	0.000015	0.000015	0.000005	0.000005	0.000005	0.00001	0.000005	0.000005	0.000015	0.000015	0.000015
64	D. Calcium (Ca)	90	91.2	92.7	92.3	71.9	88.4	93.8	60.3	61.8	70.1	68.1	44.4	44.6	88.1	84.9	89.1
65	D. Chromium (Cr)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
66	D. Cobalt (Co)	0.00032	0.00031	0.00033	0.00033	0.00024	0.00031	0.0003	0.00025	0.00007	0.00024	0.0001	0.00018	0.00017	0.00035	0.00036	0.00037
67	D. Copper (Cu)	0.0011	0.0011	0.0023	0.0013	0.0005	0.0007	0.0008	0.0026	0.0019	0.0005	0.0019	0.0017	0.0016	0.0009	0.0013	0.0014
68	D. Iron (Fe)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.01
69	D. Lead (Pb)	0.00001	0.00001	0.00007	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00002	0.00003	0.00001	0.00001	0.00002	0.00001	0.00002
70	D. Lithium (Li)	0.047	0.0418	0.0414	0.0422	0.0428	0.0422	0.0418	0.0142	0.0152	0.0434	0.0152	0.0204	0.0216	0.0418	0.0388	0.0398
71	D. Magnesium (Mg)	41.3	41.4	45.5	45.5	40.8	40.9	40.6	26	32.1	40.9	35	25.2	24.3	41.2	40.9	42.9
72	D. Manganese (Mn)	0.0663	0.0677	0.0704	0.0695	0.0064	0.0776	0.0781	0.0388	0.0002	0.0058	0.0004	0.0387	0.0379	0.073	0.0744	0.0771
73	D. Mercury (Hg)	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002
74	D. Molybdenum (Mo)	0.0152	0.015	0.0183	0.018	0.016	0.0174	0.0178	0.0082	0.00852	0.0167	0.00804	0.01	0.00958	0.0164	0.0159	0.0159
75	D. Nickel (Ni)	0.0035	0.0035	0.0038	0.0039	0.0035	0.0029	0.0029	0.0022	0.0012	0.0036	0.0012	0.0023	0.0021	0.0035	0.0036	0.0037
76	D. Potassium (K)	9.8	9.66	11.4	11.2	9.54	10	10	5.22	3.15	9.42	3.42	3.95	3.72	10.4	10.4	11.2
77	D. Selenium (Se)	0.0008	0.0008	0.0006	0.0006	0.001	0.0008	0.0008	0.0008	0.0028	0.001	0.0026	0.0014	0.0012	0.0006	0.0006	0.0006
78	D. Silver (Ag)	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
79	D. Sodium (Na)	32.9	31.3	38.2	37	38	30.7	31.2	13.7	10.5	35.1	11.3	12.7	13.7	36.6	37.7	39.3
80	D. Strontium (Sr)	0.597	0.616	0.659	0.661	0.652	0.602	0.61	0.288	0.231	0.665	0.23	0.211	0.201	0.603	0.602	0.62
81	D. Tellurium (Te)	0.00004	0.00004	0.00004	0.00002	0.00003	0.00004	0.00002	0.00003	0.00001	0.00004	0.00006	0.00001	0.00002	0.00004	0.00005	0.00007
82	D. Thallium (Tl)	0.000022	0.000022	0.000024	0.000022	0.000022	0.000022	0.000022	0.000008	0.000002	0.000022	0.000008	0.000004	0.000004	0.000022	0.000022	0.000022
83	D. Tin (Sn)	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00004	0.00002	0.00002	0.00002	0.00002	0.00002
84	D. Titanium (Ti)	0.00005	0.00005	0.0001	0.0001	0.00005	0.0001	0.0001	0.00005	0.0001	0.00005	0.0002	0.00015	0.00015	0.00015	0.0001	0.0001
85	D. Tungsten (W)	0.00129	0.00129	0.0008	0.00075	0.0008	0.00102	0.00105	0.00005	0.00001	0.00083	0.00004	0.00005	0.00003	0.00071	0.0007	0.00072
86	D. Uranium (U)	0.00182	0.00183	0.0014	0.00137	0.00168	0.0016	0.00163	0.0183	0.00414	0.00175	0.00388	0.0081	0.00792	0.00133	0.0013	0.00146
87	D. Vanadium (V)	0.00065	0.0006	0.00085	0.0008	0.0007	0.00075	0.00075	0.00035	0.0011	0.00065	0.00135	0.00025	0.00025	0.0009	0.00065	0.0007
88	D. Zinc (Zn)	0.005	0.004	0.006	0.008	0.013	0.0055	0.0045	0.0095	0.002	0.012	0.0035	0.0115	0.0135	0.084	0.007	0.0055
89	D. Zirconium (Zr)	0.00006	0.00008	0.00006	0.00006	0.00004	0.00004	0.00004	0.00004	0.00006	0.00008	0.00016	0.00004	0.00004	0.00006	0.00006	0.00006

	A	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS
1	Station	In Pit Sump 3 Discharge105	In Pit Sump 3 Discharge106	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge107	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge108	In Pit Sump 4 Discharge109	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge110	In Pit Sump 4 Discharge111	In Pit Sump 4 Discharge112	In Pit Sump 3 Discharge113	In Pit Sump 4 Discharge114
2	Discharge Coordinates (UTM	15U 424982E 5409309N	15U 424982E 5409309N	15U 426327E 5410357N	15U 426327E 5410357N	15U 425836E 5409205N	15U 426327E 5410357N	15U 425836E 5409205N	15U 425836E 5409205N	15U 424982E 5409309N	
3	Date Sampled	07-Dec-16	07-Dec-16	11-Dec-16	11-Dec-16	11-Dec-16	12-Dec-16	12-Dec-16	12-Dec-16	20-Dec-16	29-Dec-16
4	pH_Field	7.25	7.25	8.05	7.78	7.15	8.14	7.17	7.18	7.19	7.28
5	Temp_Field	0.3	0.3	1.7	2.5	2.1	1.4	2.1	2.1	1.57	0.75
6	DO_Field	13.6	13.53	14.98	10.1	11.99	9.92	11.39	11.05	23.1	12.5
7	Conductivity	907	909	617	564	1040	603	1020	1030	1200	1070
8	Hardness	387	390	299	272	432	302	434	434	477	451
9	pH_Lab	7.4	7.45	7.99	7.97	7.31	7.92	7.15	7.01	7.42	7.46
10	TSS	3.5	4	5.5	4	2.5	6.5	0.5	1.5	5.5	19
11	Alkalinity (Total as CaCO3)	332	343	200	216	385	213	379	379	447	424
12	Total Ammonia-N	5.27	5.15	0.042	0.018	7	0.028	6.72	6.86	6.44	7.6
13	Ammonia - U	0.008	0.008	0.001	0.001	0.01	**0.001**	0.01	0.01	0.009	0.013
14	Chloride (Cl)	43	43.4	15.1	10.2	50.5	12.9	49	50.5	55	58.5
15	Nitrate (N)	6.94	6.99	3.23	1.51	7.52	2.47	7.48	7.53	7.58	6.85
16	Nitrite (N)	0.257	0.259	0.036	0.013	0.317	0.026	0.303	0.315	0.312	0.353
17	Orthophosphate (P)										
18	Sulfate (SO4)	79.9	80.9	98	68.3	86.1	86.0	84.3	86.2	95.9	85.9
19	Cyanide, Free										
20	Total Cyanide (CN)	0.032	0.032	0.001	0.001	0.034	**0.001**	0.034	0.033	0.033	0.04
21	T. Aluminum (Al)	0.0875	0.0805	0.197	0.12	0.0655	0.202	0.042	0.0625	0.0525	0.226
22	T. Antimony (Sb)	0.0197	0.0195	0.00053	0.00033	0.0218	0.00045	0.0208	0.0213	0.0243	0.0276
23	T. Arsenic (As)	0.0026	0.0025	0.001	0.001	0.0023	0.0010	0.0023	0.0023	0.0028	0.0024
24	T. Barium (Ba)	0.0314	0.0319	0.0607	0.0572	0.0322	0.0577	0.0303	0.0307	0.043	0.0262
25	T. Beryllium (Be)	0.00001	0.00001	0.00001	0.00001	0.00001	**0.00001**	0.00001	0.00001	0.00001	0.00001
26	T. Bismuth (Bi)	0.00002	0.00002	0.00002	0.00002	0.00002	**0.00002**	0.00002	0.00002	0.00002	0.00002
27	T. Boron (B)	0.133	0.136	0.148	0.0945	0.166	0.113	0.156	0.151	0.169	0.155
28	T. Cadmium (Cd)	0.00001	0.00001	0.000015	0.000015	0.00002	0.000015	0.000025	0.000015	0.00002	0.000025
29	T. Calcium (Ca)	85.7	87	71.4	63.3	101	67.5	98.3	94.1	119	108
30	T. Chromium (Cr)	0.0001	0.0002	0.0008	0.0004	0.0002	0.0006	0.0001	0.0003	0.0001	0.0005
31	T. Cobalt (Co)	0.00045	0.00045	0.0003	0.00019	0.00052	0.00025	0.00053	0.00053	0.00056	0.0006
32	T. Copper (Cu)	0.0018	0.0027	0.0051	0.0058	0.001	0.0054	0.0147	0.0011	0.0018	0.0007
33	T. Iron (Fe)	0.09	0.09	0.24	0.14	0.09	0.22	0.07	0.09	0.07	0.31
34	T. Lead (Pb)	0.0001	0.00015	0.00016	0.00013	0.00007	0.00013	0.00078	0.00006	0.0001	0.00014
35	T. Lithium (Li)	0.042	0.0418	0.0286	0.0264	0.0514	0.0264	0.0506	0.05	0.0498	0.0524
36	T. Magnesium (Mg)	41.6	41.8	33.7	30.5	46.4	32.6	46.9	45.5	53.8	47.2
37	T. Manganese (Mn)	0.0804	0.0799	0.0209	0.0112	0.111	0.0178	0.112	0.113	0.114	0.133

	A	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS
1	Station	In Pit Sump 3 Discharge105	In Pit Sump 3 Discharge106	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge107	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge108	In Pit Sump 4 Discharge109	Process Plant and Crusher Area Temporary Sediment Ponds (South Runoff Pond) Discharge110	In Pit Sump 4 Discharge111	In Pit Sump 4 Discharge112	In Pit Sump 3 Discharge113	In Pit Sump 4 Discharge114
2	Discharge Coordinates (UTM	15U 424982E 5409309N	15U 424982E 5409309N	15U 426327E 5410357N	15U 426327E 5410357N	15U 425836E 5409205N	15U 426327E 5410357N	15U 425836E 5409205N	15U 425836E 5409205N	15U 424982E 5409309N	
3	Date Sampled	07-Dec-16	07-Dec-16	11-Dec-16	11-Dec-16	11-Dec-16	12-Dec-16	12-Dec-16	12-Dec-16	20-Dec-16	29-Dec-16
38	T. Mercury (Hg)	0.000002	0.000002	0.000002	0.000002	0.000026	**0.000002**	0.000002	0.000002	0.000002	0.000002
39	T. Molybdenum (Mo)	0.0204	0.0208	0.0084	0.00516	0.0223	0.00724	0.0223	0.0226	0.0238	0.0197
40	T. Nickel (Ni)	0.0039	0.0039	0.0032	0.0026	0.0052	0.0029	0.0051	0.0053	0.0055	0.007
41	T. Phosphorus (P)										
42	T. Potassium (K)	11.1	11.6	5.69	5.14	14.6	5.48	14.1	14	14	12.7
43	T. Selenium (Se)	0.0006	0.0006	0.0014	0.0008	0.0006	0.0012	0.0006	0.0006	0.0006	0.0006
44	T. Silver (Ag)	0.00001	0.00001	0.00001	0.00001	0.00001	**0.00001**	0.00001	0.00001	0.00001	0.00001
45	T. Sodium (Na)	39.3	39.7	13.2	8.34	44.8	11.5	45.3	44.6	48.8	47.2
46	T. Strontium (Sr)	0.651	0.666	0.221	0.168	0.699	0.204	0.715	0.711	0.827	0.762
47	T. Tellurium (Te)	0.00017	0.00016	0.00004	0.00002	0.00008	0.00004	0.0001	0.00013	0.0001	0.00009
48	T. Thallium (Tl)	0.000024	0.000024	0.000012	0.00001	0.000024	0.000010	0.000022	0.000022	0.000028	0.00003
49	T. Tin (Sn)	0.00002	0.00002	0.00004	0.00002	0.00002	0.00002	0.00004	0.00002	0.00002	0.00004
50	T. Titanium (Ti)	0.00285	0.0027	0.0077	0.0044	0.003	0.00795	0.0012	0.00235	0.0019	0.0091
51	T. Tungsten (W)	0.00083	0.00084	0.00007	0.00006	0.00087	0.00006	0.0008	0.0008	0.00105	0.00087
52	T. Uranium (U)	0.00152	0.00152	0.0142	0.00802	0.0013	0.0104	0.00109	0.0011	0.00176	0.00152
53	T. Vanadium (V)	0.00085	0.0009	0.0013	0.00105	0.00085	0.00130	0.00075	0.0008	0.00105	0.00115
54	T. Zinc (Zn)	0.0105	0.011	0.0225	0.0225	0.013	0.0225	0.025	0.016	0.015	0.02
55	T. Zirconium (Zr)	0.00016	0.00018	0.00034	0.00058	0.00016	0.00048	0.0001	0.00012	0.00016	0.00026
56	D. Aluminum (Al)	0.004	0.008	0.004	0.003	0.004	0.015	0.003	0.004	0.003	0.001
57	D. Antimony (Sb)	0.0196	0.019	0.00051	0.00033	0.0216	0.00042	0.0222	0.021	0.0249	0.027
58	D. Arsenic (As)	0.00301	0.00273	0.00092	0.00092	0.00232	0.00088	0.0023	0.00231	0.00273	0.00224
59	D. Barium (Ba)	0.0316	0.0314	0.0608	0.0566	0.0333	0.0575	0.0315	0.032	0.0413	0.0232
60	D. Beryllium (Be)	0.00001	0.00001	0.00001	0.00001	0.00001	**0.00001**	0.00001	0.00001	0.00001	0.00001
61	D. Bismuth (Bi)	0.00002	0.00002	0.00002	0.00002	0.00002	**0.00002**	0.00002	0.00002	0.00002	0.00002
62	D. Boron (B)	0.138	0.14	0.127	0.089	0.144	0.113	0.15	0.149	0.182	0.152
63	D. Cadmium (Cd)	0.000015	0.000015	0.00001	0.00001	0.000015	0.000010	0.00002	0.00002	0.000015	0.000015
64	D. Calcium (Ca)	83.2	86.1	67.6	62.3	99	68.3	98.6	98.3	110	105
65	D. Chromium (Cr)	0.0001	0.0002	0.0002	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001
66	D. Cobalt (Co)	0.0004	0.00042	0.00017	0.00013	0.00051	0.00014	0.0005	0.00051	0.00051	0.0005
67	D. Copper (Cu)	0.0015	0.0023	0.0046	0.0052	0.0008	0.0045	0.0007	0.0007	0.0011	0.0002
68	D. Iron (Fe)	0.01	0.01	0.01	0.01	0.01	**0.01**	0.01	0.01	0.01	0.02
69	D. Lead (Pb)	0.00004	0.00008	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
70	D. Lithium (Li)	0.0438	0.044	0.0284	0.0274	0.0508	0.0276	0.0508	0.0506	0.0536	0.0552
71	D. Magnesium (Mg)	43.6	42.5	31.6	28.4	44.8	31.8	45.5	45.7	49.2	45.7
72	D. Manganese (Mn)	0.0793	0.0772	0.0141	0.0067	0.112	0.0119	0.111	0.111	0.11	0.126
73	D. Mercury (Hg)	0.000002	0.000002	0.000002	0.000002	0.000002	**0.000002**	0.000002	0.000002	0.000002	0.000002
74	D. Molybdenum (Mo)	0.0196	0.0194	0.0077	0.00496	0.0208	0.00688	0.0218	0.0214	0.0218	0.0178
75	D. Nickel (Ni)	0.0039	0.0039	0.0025	0.0023	0.0048	0.0026	0.0051	0.0051	0.0054	0.0063
76	D. Potassium (K)	11.5	11.3	6.13	4.92	14.5	5.41	13.8	14.1	13.1	12.3
77	D. Selenium (Se)	0.0008	0.0008	0.0016	0.001	0.0006	0.0016	0.0006	0.0006	0.0006	0.0006
78	D. Silver (Ag)	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
79	D. Sodium (Na)	40.4	39.8	13.3	8.32	42.5	10.8	43.9	44.8	45.4	45
80	D. Strontium (Sr)	0.633	0.649	0.215	0.166	0.691	0.204	0.701	0.697	0.778	0.729
81	D. Tellurium (Te)	0.00005	0.00005	0.00002	0.00002	0.00003	0.00002	0.00004	0.00004	0.00007	0.00003
82	D. Thallium (Tl)	0.000022	0.000022	0.000008	0.00001	0.000028	0.000008	0.000024	0.000022	0.000026	0.000028
83	D. Tin (Sn)	0.00004	0.0012	0.00002	0.00002	0.00002	0.00010	0.00002	0.00002	0.00002	0.00002
84	D. Titanium (Ti)	0.0001	0.00015	0.0001	0.0001	0.0001	0.00015	0.0001	0.00015	0.0001	0.00005
85	D. Tungsten (W)	0.00081	0.0008	0.00006	0.00007	0.00082	0.00006	0.00081	0.0008	0.00106	0.00089
86	D. Uranium (U)	0.0014	0.00141	0.0141	0.00803	0.00123	0.0100	0.00111	0.0011	0.00166	0.00147
87	D. Vanadium (V)	0.0006	0.0007	0.0006	0.0007	0.0006	0.00115	0.0006	0.0006	0.0007	0.00045
88	D. Zinc (Zn)	0.0115	0.031	0.021	0.0225	0.013	0.133	0.018	0.017	0.0165	0.019
89	D. Zirconium (Zr)	0.00006	0.00044	0.0001	0.00014	0.00006	0.00012	0.00006	0.00006	0.00008	0.00014

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May 31th 2016

Ray Boivin
Senior Environmental Officer
Ministry of Environment and Climate Change
808 Robertson St.
Kenora ON P9N 1X9
Via email; ray.boivin@ontario.ca

Dear Mr. Boivin,

RE; In Pit Sump 3 ECA Total Suspended Solids Exceedance

Further to the discussion on 20th May 2016 regarding a sediment release from In Pit Sump 3 on 15th April 2016 (Licensed MMER Discharge Location "In Pit Sumps"), the following report is being submitted to the Ministry of Environment and Climate Change (MOECC).

Discovery

- During routine data entry and review, it was noted by Environmental Technician that the Total Suspended Solids for the In Pit Sump 3 discharge was 41.5 mg/L on 15th April 2016.
- These results were obtained from samples sent to ALS Environmental.

Cause

- In Pit Sump 3 was sampled on 11th April 2016 to determine if water quality objectives were met and a certified lab calculated the Total Suspended Solids to be 3.5 mg/L.
- There was no water pumped into Sump 3 between 11th April 2016 and 15th April 2016.
- There was no precipitation between 11th April 2016 and 15th April 2016.
- The discharge pump was started at 12:30 15th April 2016 and ran for approximately 12 hours.
- The sample was taken at discharge on 15th April 2016 at 13:10.
- Due to sampling occurring close to the time the discharge started, it is determined that the sample collected sediment that settled in the hose of the pump and at the intake.
- When the discharge started, this sediment laden water would have surged through the pump for a short timeframe at which point the sample was taken.

Clean Up and Recovery

- Water samples were collected at the discharge location on 15th April 2016 to quantify the water quality that was released to a vegetated wetland area surrounding the discharge location.
- It is not predicted that any sediment laden water made it to West Creek or the Pinewood River as the water has to flow through low-lying wetland grasses that would reduce the total suspended solids in the water significantly.

Preventative measures and schedule of implementation

- A treatment system for total suspended solids has been installed to treat water being pumped into Sump 3.
- Further training for the Environment Team to mitigate future exceedances discharge.

- Since the occurrence, New Gold has hired a single contractor to operate the water management pumps on site.

The In Pit Sumps are a component of the water management plan to control contact water in the Open Pit. As the Phase 1 Pit is developed, the need to dewater work areas is of high priority. Lack of training and understanding of the visual water quality expected at discharge led to no indication that the water quality was in question until the data was reviewed.

If you have any questions regarding the spill report or construction activity, please contact the undersigned.

Regards,

Garnet Cornell
Environmental Technician
garnet.cornell@newgold.com

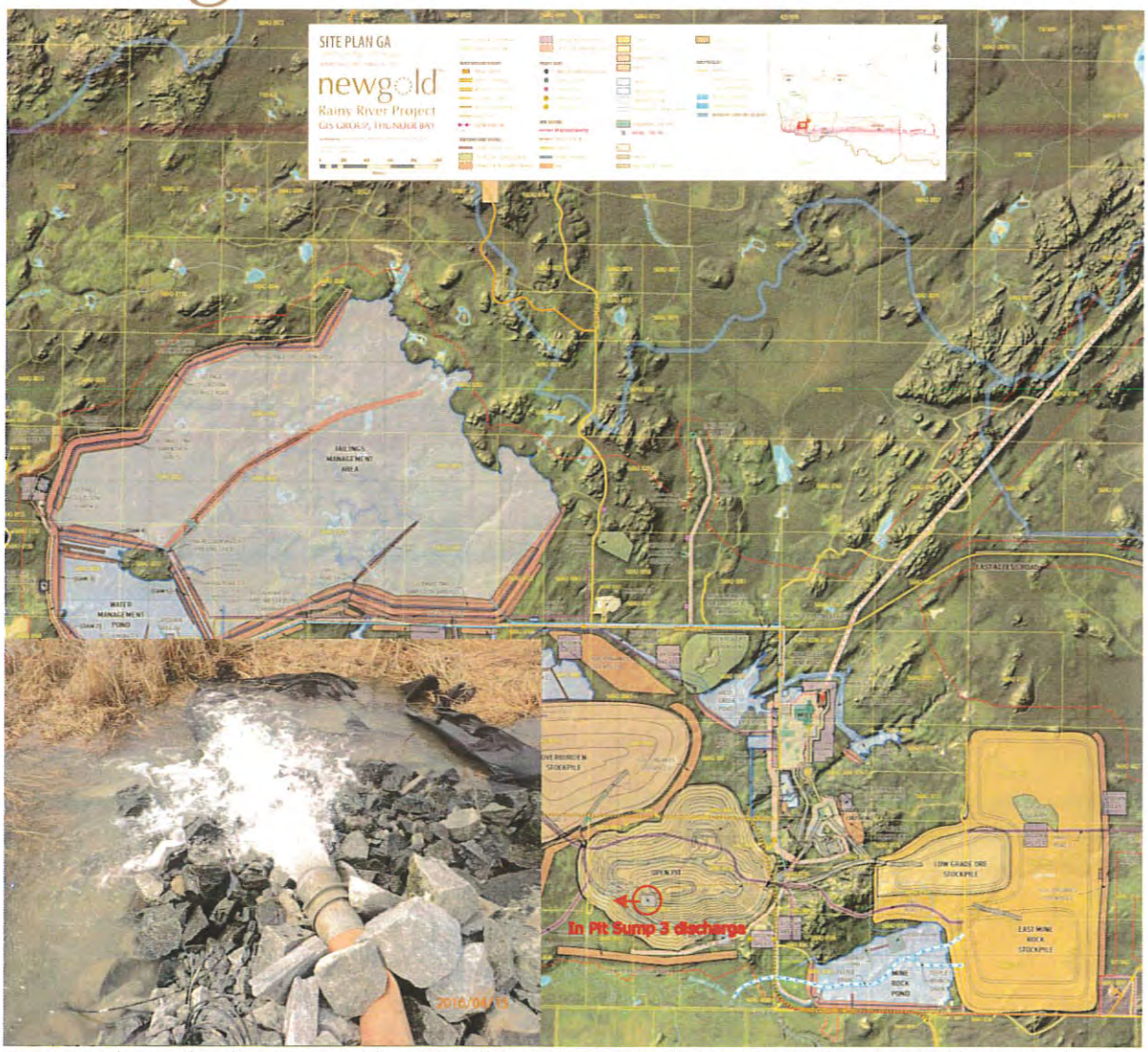

Figure 1 shows the direction and location of In Pit Sump 3 discharge and the visual effluent quality on the 15th April 2016.

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April 27th 2016

Ray Boivin
Senior Environmental Officer
Ministry of Environment and Climate Change
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Kenora ON P9N 1X9
Via email; ray.boivin@ontario.ca

Dear Mr. Boivin,

RE: Spill Report for SAC Reference # 5640-A97NVD,

Further to the notification to Spills Action Centre (SAC Reference #5640-A97NVD) on 19th April 2016 regarding a sediment release from the Plant Site Treatment System (Licensed MMER Discharge Location "Process Plant Site"), the following report is being submitted to the Ministry of Environment and Climate Change (MOECC) consistent with requested reporting for all notifications to SAC and in accordance with our ECA approval.

Discovery

- During routine sampling of the discharge, it was noted by Environmental Technician that the effluent was visibly turbid.
- Contact was made to the supervisor of the area and discharge was stopped immediately.
- The sediment laden water was tracked off of the discharge point to and was observed to have only travelled 75 meters over vegetation until it was no longer visibly turbid. Turbid effluent did not enter a waterbody.
- The discharge of sediment laden effluent occurred between 12:45 and 15:15 on 19th April 2016.

Cause

- The Plant Site Treatment System is designed as 12-day retention time to allow fine clay particles to settle out. The maximum input flow rate is 1,800 cubic meters per day.
- Due to multiple inputs from different work fronts, the water flow exceeded the calculated maximum flow rate allowable. This increase of flow inundated the system with sediment. Sediment laden effluent was released to a vegetated area downslope of the discharge location, and was not transported into a waterbody.

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Clean Up and Recovery

- The discharge from the polishing pond was stopped immediately.
- Water samples were collected at the discharge location to quantify the water quality that was released to a vegetated area downslope of the discharge location.
- Sampling inside of the treatment system will continue until water quality limits are met.

Preventative measures and schedule of implementation

- The treatment system for total suspended solids was re-installed. The treatment system was disconnected for the winter season.
- Increased communication to ensure pumping quantities and flows do not exceed the maximum flow to allow a 12-day retention time.
- The system is moving internally towards a single contractor operating the water management pumps on the site.

The use of the Plant Site Treatment System is a component of the water management plan to control contact water at the Plant Site. As new work fronts continue to come on board, the need to dewater work areas is of high priority. Due to the winter season, the flocculant system was disconnected from the pump lines to prevent damage. Lack of communication and understanding of the systems capabilities led to the system being overwhelmed.

The treatment system has now been re-installed and is functioning as intended to allow future water quality meet the criteria set out in the ECA approval.

If you have any questions regarding the spill report or construction activity, please contact the undersigned.

Regards,

Cailey Anderson
Environmental Specialist
New Gold – Rainy River Project
Cailey.anderson@newgold.com

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July 19th 2016

Ray Boivin
Senior Environmental Officer
Ministry of the Environment and Climate Change
808 Robertson St.
Kenora ON P9N 1X9
Via email; ray.boivin@ontario.ca

Dear Mr. Boivin,

RE; In Pit Sumps 3 and 4 ECA Un-ionized Ammonia Exceedances

Further to the discussion on 30th June 2016 regarding an un-ionized ammonia release from In Pit Sumps 3 and 4 on 9th May 2016 and 30th May 2016, respectively (Licensed MMER Discharge Location "In Pit Sumps"), the following report is being submitted to the Ministry of Environment and Climate Change (MOECC).

Discovery

- During routine data entry and review, it was noted by Environmental Technician that the Un-ionized Ammonia for the In Pit Sump 4 discharge was 0.526 mg/L on 30th May 2016.
- Sampling before discharge of In Pit Sump 4 occurred on 24th May 2016 and determined the Un-ionized Ammonia to be 0.001 mg/L.
- No water was pumped into In Pit Sump 4 between when the samples were taken on 24th May 2016 and when discharge began on 30th May 2016.
- An internal data audit determined that a discharge from In Pit Sump 3 also exceeded the ECA Un-ionized Ammonia limits with 0.339 mg/L on 9th May 2016 which varied from certified lab results of 0.001 mg/L,
- The certified lab was queried about the validity of the Un-ionized Ammonia results for the month of May.

Cause

- Treatment of the In Pit Sumps was determined by the Un-ionized Ammonia content calculated by an accredited lab.
- Due to the lab calculating the Un-ionized Ammonia content to be 0.001 mg/L, a limited treatment of In Pit Sump 3 and no treatment of In Pit Sump 4, occurred.
- The samples were sent to an alternate lab during these sample periods to measure Ammonia content.
- An internal calculation error between the two accredited labs calculated the Un-ionized Ammonia to be 0.001 mg/L for all samples between 3rd May 2016 and 25th May 2016.

Clean Up and Recovery

- No implication to water quality in the natural systems was noted as downstream sampling sites showed no increase in un-ionized ammonia content during surface water sampling.

- The nearest surface water sampling site, SW21A, was sampled on 18th May 2016 and 22nd June 2016 and determined an un-ionized ammonia content of 0.001 mg/L and 0.018 mg/L, respectively.

Preventative measures and schedule of implementation

- Treatment quantity will be increased to a set amount to mitigate increased Un-ionized Ammonia content.
- All In Pit Sumps will be treated once at full capacity.
- Sampling and analysis from an accredited lab will continue to occur before discharge is to take place.
- Routine data entry, review, and auditing will continue to occur for all results received from an accredited lab.

The In Pit Sumps are a component of the water management plan used to control contact water in the Mine Open Pit. As the Phase 1 Pit is developed, the need to dewater work areas is of high priority.

If you have any questions regarding the spill report or construction activity, please contact the undersigned.

Regards,

Garnet Cornell
Environmental Technician
garnet.cornell@newgold.com

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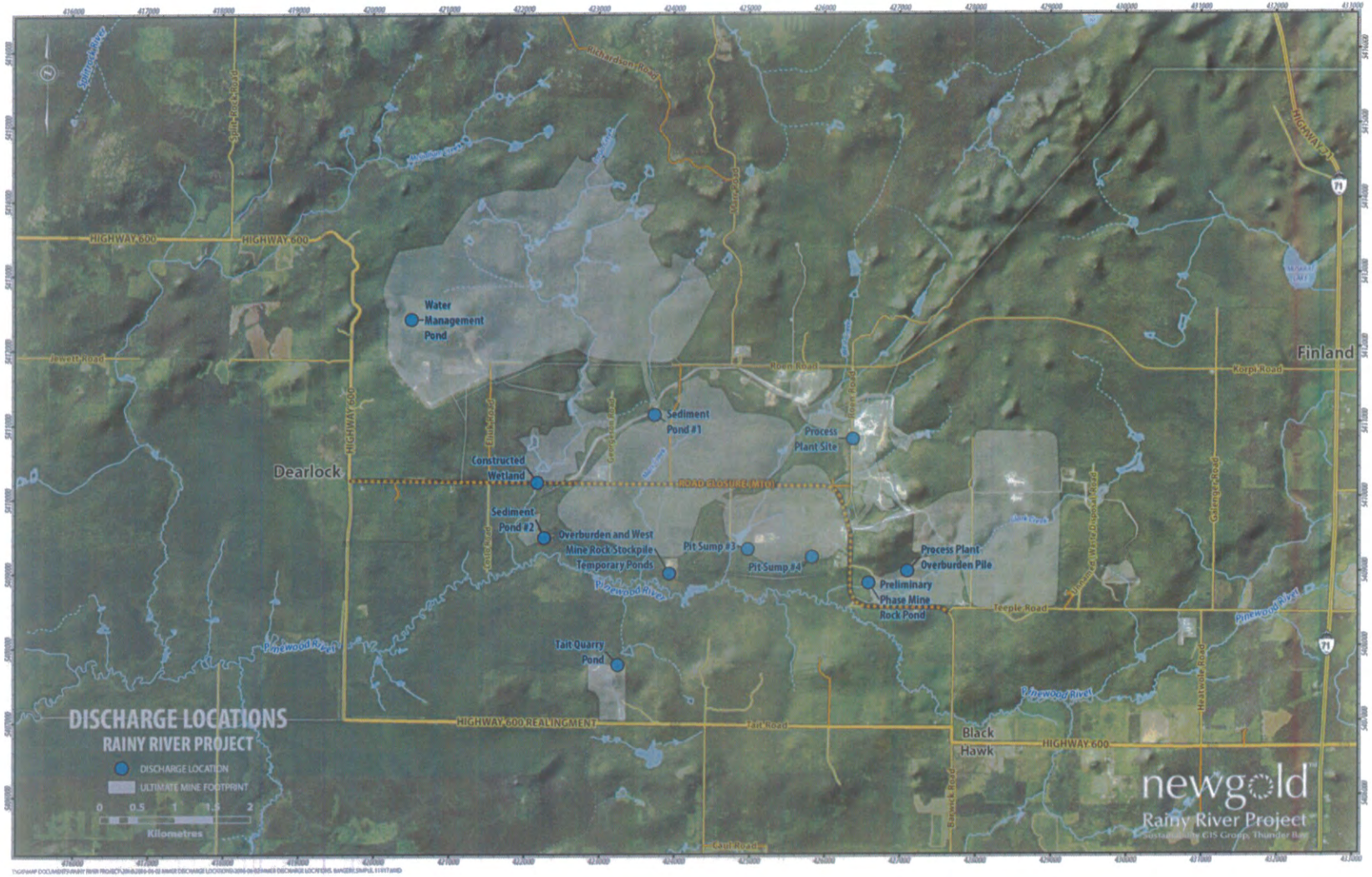

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August 3, 2016

Ray Boivin
Senior Environmental Officer
Ministry of Environment and Climate Change
808 Robertson St.
Kenora, ON P9N 1X9
Via email; Ray.Boivin@ontario.ca

Dear Mr. Boivin,

RE; Plant Site South Runoff Pond ECA Total Suspended Solids Exceedance

Further to the notification to the Spills Action Centre (SAC) Reference #4401-AC-J3CQ, the following report is being submitted to the Ministry of Environment and Climate Change (MOECC) regarding a Total Suspended Solids exceedance from the Plant Site South Runoff Pond per ECA 5781-9VJQ2J.

Discovery

- During routine data entry, it was noted by Environmental Technician that the Total Suspended Solids was calculated to be 32.5 mg/L during a discharge of the Plant Site South Runoff Pond on 30th June 2016.
- Discharge was allowed to occur due to sampling of the water quality on 27th June 2016 where total suspended solids was calculated to be 12.5 mg/L.

Cause

- It was discovered that the Plant Site South Runoff Pond had bedrock protruding into it during construction.
- These outcrops were capped with clay to prevent weathering of the rock.
- The intake of the discharge pump was placed in the corner where the clay outcrop and wall met.
- Rainfall overnight, erosion of the walls, and inadequate missing of the sump led to elevated Total Suspended Solids levels at discharge.

Clean Up and Recovery

- There was no turbid water indicated downstream after the exceedance in West Creek. Turbidity reading was 7.3 NTU.

Preventative measures and schedule of implementation

- More flocculent treatment blocks were added to the inputs of the pond.
- The pump and intake were relocated to a more desirable location which included:
    - A gradual slope from top of bank to water level.
    - Centralized intake area that allowed for better mixing.

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The use of the Plant Site South Runoff Pond is a component of the water management plan to control contact water at the Plant Site. As new work fronts continue to come on board, the need to dewater work areas is of high priority. Due to water quality needs in the mill, the Plant Site South Runoff Pond is intended to send all contact water from the Plant Site to the mill for use.

The flocculent treatment system in use is flocculent blocks placed in passive drainage culverts along the pond. As contact water drains into the system, treatment is applied and mixed with the use of rip-rap on the downstream side.

If you have any questions regarding the spill report or construction activity, please contact the undersigned.

Regards,

Tuula Griffith

on behalf of

Garnet Cornell
Environmental Technician
garnet.cornell@newgold.com

cc: Adam Scheepers, Fishery Inspector, Enviro Canada; adam.scheepers@canada.ca
Andrea Doherty, DFO; andrea.doherty@dfo-mpo.gc.ca

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August 4th 2016

Ray Boivin
Senior Environmental Officer
Ministry of the Environment and Climate Change
808 Robertson St.
Kenora, ON P9N 1X9
Via email; Ray.Boivin@ontario.ca

Dear Mr. Boivin,

RE; In Pit Sump 4 ECA Un-Ionized Ammonia Exceedances

Further to the notification to the Spills Action Centre (SAC) Reference #4401-AC-J3CQ, regarding an un-ionized ammonia release from in Pit Sump 4 on June 30th 2016, respectively (Licensed MMER Discharge Location "In Pit Sumps"), the following report is being submitted to the Ministry of Environment and Climate Change (MOECC).

Discovery

- During routine data entry and review, it was noted by Environmental Technician that the Un-Ionized Ammonia for the in Pit Sump 4 discharge was 0.211 mg/L on 30th June 2016.
- Sampling before discharge of in Pit Sump 4 occurred on 27th June 2016 and determined the Un-Ionized Ammonia to be 0.117 mg/L.
- No water was pumped into in Pit Sump 4 between when the samples were taken on 27th June 2016 and when discharge began on 30th June 2016.

Cause

- A set amount of treatment was used to reduce the amount of Un-Ionized Ammonia in Sump 4 before discharge.
- Sample taken before discharge determined the Un-Ionized Ammonia to be below the Daily Maximum limit (0.117 mg/L).
- Discharge was critical due to Open Pit requiring water storage as the floor had large amounts of pooling water.
- Atmospheric conditions were clear and sunny which increase evaporation and decrease Unionized Ammonia content.
- Treatment quantity was too small.

Clean Up and Recovery

- No implication to water quality in the natural systems was noted as downstream sampling sites showed no increase in un-ionized ammonia content during surface water sampling.
- The nearest surface water sampling site, SW21A, was sampled on 14th July 2016 and determined an un-ionized ammonia content of <0.001 mg/L.

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Preventative measures and schedule of implementation

- Treatment quantity will be increased to a set amount to mitigate increasing Un-Ionized Ammonia content.
- All in Pit Sumps will be treated once at full capacity.
- Sampling and analysis from an accredited lab will continue to occur before discharge is to take place.
- Routine data entry, review, and auditing will continue to occur for all results received from an accredited lab.

The in Pit Sumps are a component of the water management plan used to control contact water in the Mine Open Pit. As the Phase 1 Pit is developed, the need to dewater work areas is of high priority.

If you have any questions regarding the spill report or construction activity, please contact the undersigned.

Regards,

On behalf of Tuula Griffith

Garnet Cornell
Environmental Technician
garnet.cornell@newgold.com

cc: Adam Scheepers, Fishery Inspector, Enviro Canada; adam.scheepers@canada.ca
Andrea Doherty, DFO; andrea.doherty@dfo-mpo.gc.ca

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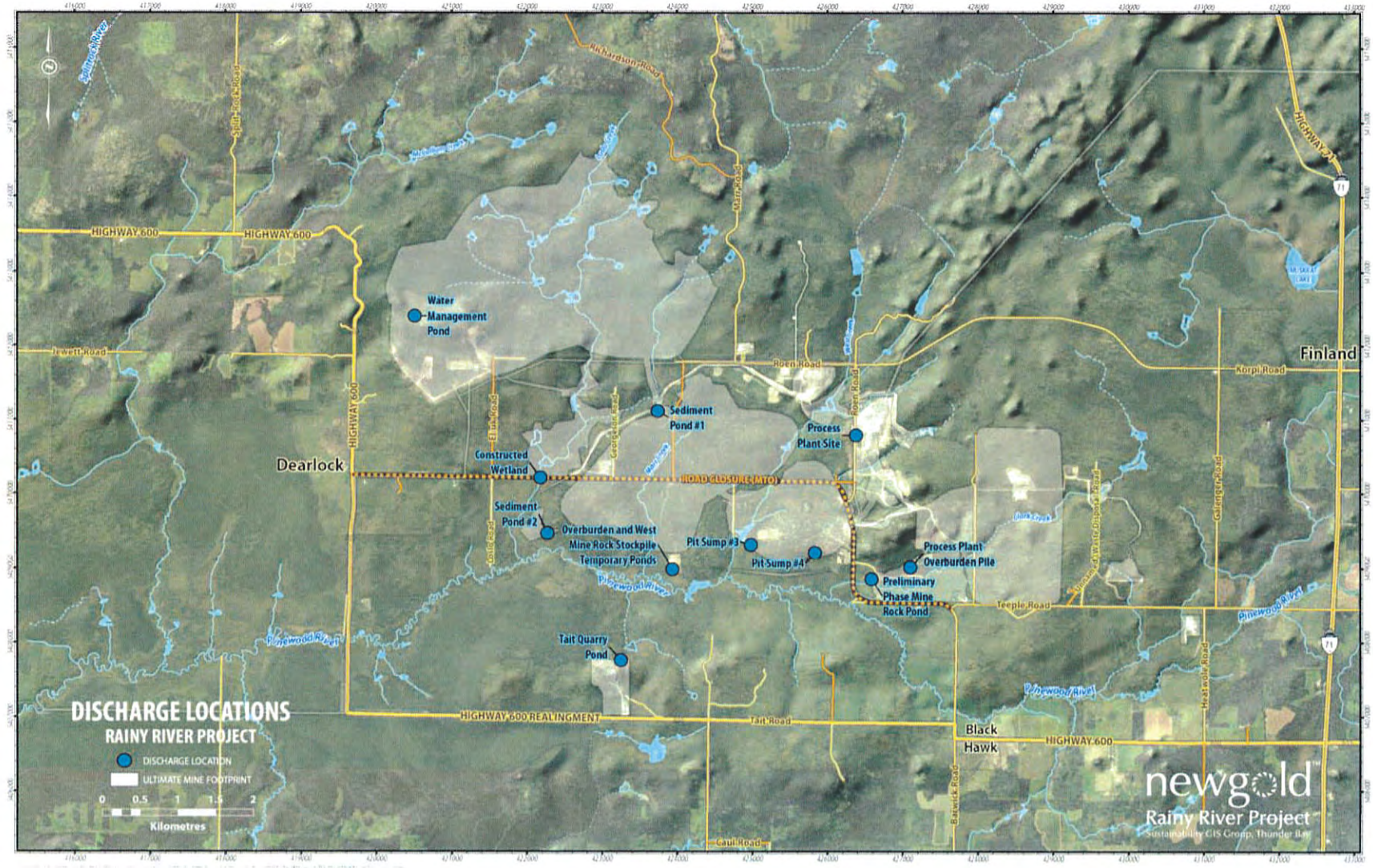

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July 18th 2016

Ray Boivin
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Via email: Ray.Boivin@ontario.ca

Dear Mr. Boivin,

RE: Spill Report for SAC Reference #8428-AB-PHUR,

Further to the notification to the Spills Action Centre (SAC) Reference #8428-AB-PHUR regarding a sediment release into the natural environment on July 8th of 2016, the following report is submitted to the Ministry of the Environment and Climate Change (MOECC), consistent with requested reporting notifications to SAC and in accordance with our ECA approval #5781-9VJQ2J.

Discovery

- At 2:30 am a clay plug in the lower West Creek Diversion was overwhelmed and allowed turbid water to enter Loslo Creek.
- Upon discovery, extra pumps and heavy equipment were mobilized in the early hours of July 8th to mitigate the release.
- A water sample was taken at 9:45 am at the confluence of Loslo Creek and Pinewood River and the analytical testing results from ALS labs in Thunder Bay yielded a total suspended solids level of 168 mg/L.
- The sediment plume was tracked and noted at 13:50 hours at the Pinewood River bridge. A water sample was taken and the analytical testing results from ALS labs yielded a total suspended solids level of 72 mg/L.
- The sediment plume dissipated between the Pinewood River bridge and the pump house. Background for the Pinewood River entering our site was 17 mg/L and the pump house was 41.5 mg/L at 14:30.

Cause

- Heavy rainfall of approximately 73 mm over a 3-hour period.
- The West Creek Diversion is currently under construction. A clay plug was in place to trap run-off water so it could be pumped to vegetation before entering any fish bearing waterbodies.

Clean Up and Recovery

- Additional pumps were bought to the lower West Creek Diversion to reduce the flow entering Loslo Creek.
- Sandbags were placed in the gap in the plug.
- A large rock-armored plug was built behind the sandbags.
- A spill way was built into the rock-armored plug to ensure water will leave this area in a more controlled fashion should we experience another situation where pumping capacity is overwhelmed.
- Water stopped leaving the diversion above Highway 600 at approximately 10:00 hours.
- At 16:17 hours a water sample was taken at the confluence of Loslo Creek and Pinewood River again and the analytical testing results from ALS labs yielded a total suspended solids level of 14.5 mg/L and another of Loslo Creek itself yielded 13 mg/L TSS at 16:40 hours. These samples prove our mitigation efforts were effective.

Preventative measures and schedule of implementation

- Additional pumps will remain at the lower West Creek Diversion and water levels will continue to be monitored.

In conclusion at 2:30 am the plug on the West Creek Diversion was breached and turbid water travelled as far as the Pinewood river bridge as a sediment plume. By 10:00 am turbid water was no longer entering the lower West Creek Diversion and by 16:00 hours clean water was again leaving our site from this area. Therefore, the duration of the event was approximately 13.5 hours and its highest recorded intensity was 168 mg/L of total suspended solids.

If you have any questions regarding the spill report or construction activity, please contact the undersigned.

Regards,

Nathan Baird
Environmental Technician
Nathan.Baird@newgold.com

cc: Adam Scheepers, Fishery Inspector, Enviro Canada; adam.scheepers@canada.ca
Andrea Doherty, DFO; andrea.doherty@dfo-mpo.gc.ca

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August 4th 2016

Ray Boivin
Senior Environmental Officer
Ministry of the Environment and Climate Change
808 Robertson St.
Kenora, ON P9N 1X9
Via email; Ray.Boivin@ontario.ca

Dear Mr. Boivin,

RE: In Pit Sump 4 ECA Un-Ionized Ammonia Exceedances

Further to the notification to the Spills Action Centre (SAC) Reference #4401-AC-J3CQ, regarding an un-ionized ammonia release from in Pit Sump 4 on July 20th 2016 (Licensed MMER Discharge Location "In Pit Sumps"), the following report is being submitted to the Ministry of Environment and Climate Change (MOECC).

Discovery

- During routine data entry and review, it was noted by Environmental Technician that the Un-Ionized Ammonia for the in Pit Sump 4 discharge was 0.359 mg/L on 20th July 2016.
- Sampling before discharge of in Pit Sump 4 occurred on 15th July 2016 and determined the Un-Ionized Ammonia to be 0.019 mg/L.
- No water was pumped into in Pit Sump 4 between when the samples were taken on 15th July 2016 and when discharge began on 20th July 2016.

Cause

- A set amount of treatment was used to reduce the amount of Un-Ionized Ammonia in Sump 4 before discharge.
- Sample taken before discharge determined the Un-Ionized Ammonia to be below the Daily Maximum limit and Monthly Average limit (0.019 mg/L).
- Treatment quantity and inadequate mixing appear to be the reason for high variance in the two samples.

Clean Up and Recovery

- No implication to water quality in the natural systems was observed.

Preventative measures and schedule of implementation

- Treatment quantity will be increased to a set amount to mitigate increasing Un-Ionized Ammonia content.
- All in Pit Sumps will be treated once at full capacity.
- Sampling and analysis from an accredited lab will continue to occur before discharge is to take place.

- Routine data entry, review, and auditing will continue to occur for all results received from an accredited lab.

The in Pit Sumps are a component of the water management plan used to control contact water in the Mine Open Pit. As the Phase 1 Pit is developed, the need to dewater work areas is of high priority.

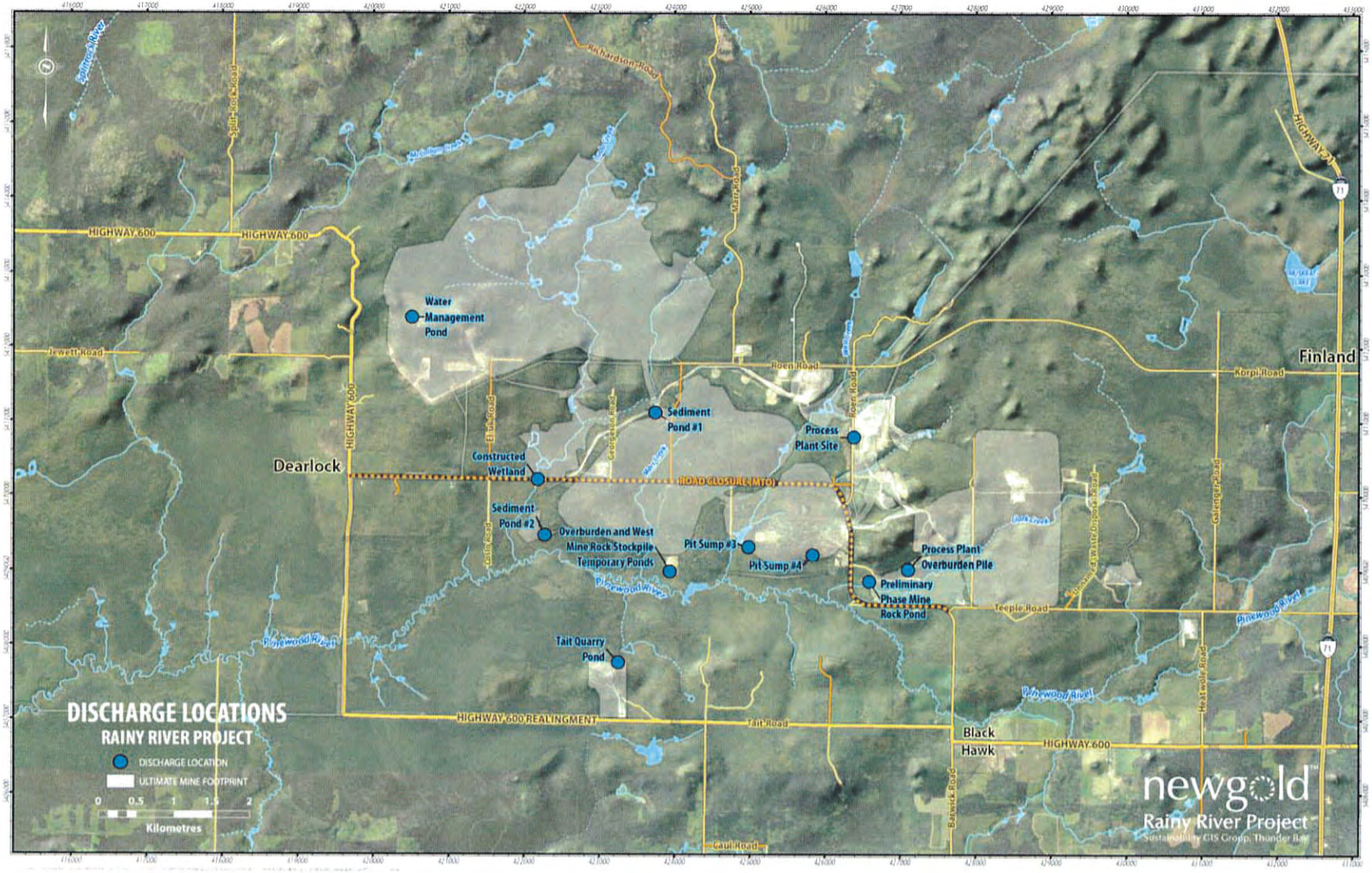
If you have any questions regarding the spill report or construction activity, please contact the undersigned.

Regards,

on behalf of Tuula Griffith

Garnet Cornell
Environmental Technician
garnet.cornell@newgold.com

cc: Adam Scheepers, Fishery Inspector, Enviro Canada; adam.scheepers@canada.ca
Andrea Doherty, DFO; andrea.doherty@dfo-mpo.gc.ca



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August 11th 2016

Ray Boivin
Senior Environmental Officer
Ministry of the Environment and Climate Change
808 Robertson St.
Kenora, ON P9N 1X9
Via email; Ray.Boivin@ontario.ca

Dear Mr. Boivin,

RE: In Pit Sump 3 ECA Un-Ionized Ammonia and Total Suspended Solids Exceedances

Further to the notification to the Spills Action Centre (SAC) Reference #5722-ACGJF8, regarding an un-ionized ammonia and total suspended solids exceedance from In Pit Sump 3 on 27th July 2016 (Licensed MMER Discharge Location "In Pit Sumps"), the following report is being submitted to the Ministry of Environment and Climate Change (MOECC).

Discovery

- During routine data entry and review, it was noted by Environmental Technician that the un-ionized ammonia and total suspended solids for the In Pit Sump 3 discharge was 0.616 mg/L and 36.0 mg/L, respectively, on 27th July 2016.

Cause

- A set amount of treatment was used to reduce the amount of Un-Ionized Ammonia in In Pit Sump 3 before discharge.
- Due to the Open Pit being inundated with water, In Pit Sump 3 was discharged before the results from a certified lab were received.
- Treatment amount was insufficient. This was done under the assumption that the set amount of dry ice was sufficient for un-ionized ammonia, which was used to treat the previous batch of water that was discharged on 15th July 2016 (un-ionized ammonia at discharge was 0.018 mg/L).
- Total suspended solids exceeded due to sand being in the samples as noted by the certified laboratory.
- During the investigation after results were received, it was stated by the contactor responsible for pumping that the water being pumped to In Pit Sump 3 was from an area located beside a recently blasted zone.

Clean Up and Recovery

- No implication to water quality in the natural systems was detected.
- Downstream samples in the Pinewood River were taken at SW22A and SW3 on 30th July 2016 where the un-ionized ammonia content was calculated to be 0.001 mg/L for both sites.
- The elevated total suspended solids would have had a limited impact downstream as the water must travel through approximately 200 m of vegetation before it reaches a sensitive receptor.

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Preventative measures and schedule of implementation

- Treatment quantity will be increased to a set amount to mitigate increasing Un-Ionized Ammonia content.
- All in Pit Sumps will be treated once at full capacity.
- Sampling and analysis from an accredited lab will continue to occur before discharge is to take place and water is not to be discharged until water quality guidelines, set out in the ECA, are met.
- Water is cycled by pumping water from one corner of the sump to the other. The discharge is released into flocculant blocks to help with total suspended solids and to assist with mixing treatment into the sump.
- A sprinkler system is set up to discharge over the water surface to assist with evaporation.
- Water is to be used for dust suppression site wide. Two water towers have been installed to allow filling of all water trucks on site, New Gold or other contractors. One water tower is mobile to allow it to travel around site to be utilized when other issues arise with water quality for other water management sumps.
- Further research is being done to find a more efficient treatment solution for high ammonia content.
- Routine data entry, review, and auditing will continue to occur for all results received from an accredited lab.

The in Pit Sumps are a component of the water management plan used to control contact water in the Mine Open Pit. As the Phase 1 Pit is developed, the need to dewater work areas is of high priority.

If you have any questions regarding the spill report or construction activity, please contact the undersigned.

Regards,

Garnet Cornell
Environmental Technician
garnet.cornell@newgold.com

cc: Adam Scheepers, Fishery Inspector, Enviro Canada; adam.scheepers@canada.ca
Andrea Doherty, DFO; andrea.doherty@dfo-mpo.gc.ca

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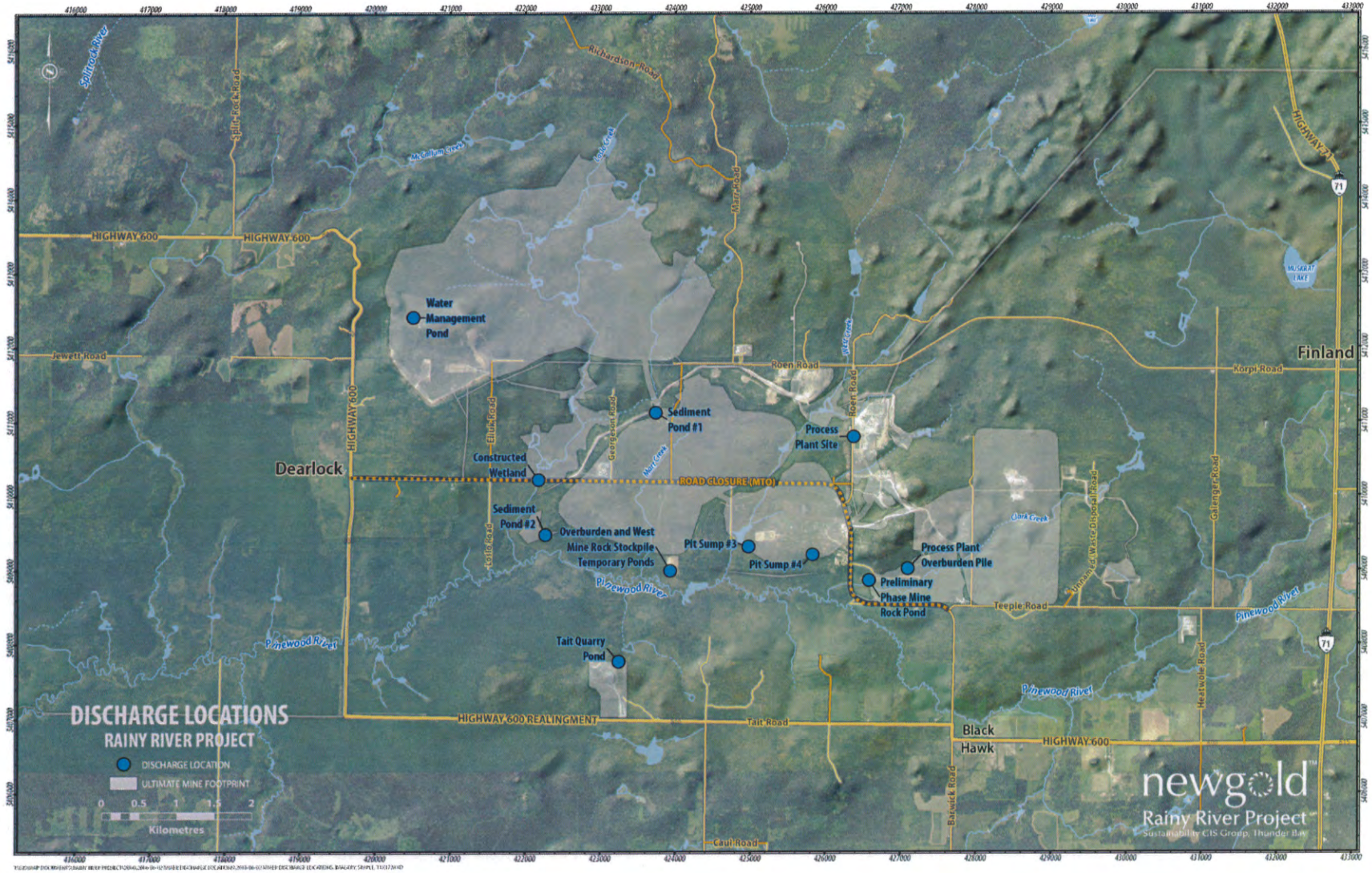

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October 15, 2016

Ray Boivin
Senior Environmental Officer
Ministry of the Environment and Climate Change
808 Robertson St.
Kenora ON P9N 1X9
Via email: Ray.Boivin@ontario.ca

Dear Mr. Boivin,

RE: Spill Report for SAC Reference #7417-AELPGC,

Further to the notification to the Spills Action Centre (SAC) Reference #7417-AELPGC regarding a Total Suspended Solids (TSS) exceedance from a mine effluent discharge into the natural environment on October 8th of 2016, the following report is submitted to the Ministry of the Environment and Climate Change (MOECC), consistent with requested reporting notifications to SAC and in accordance with our ECA approval #5781-9VJQ2J.

Discovery

- During routine monitoring of ALS WEBTRIEVE™ on October 10th, 2016 a Newgold Environmental Technician noted a TSS exceedance of 3 mg/l over our daily discharge limit of 30 mg/l from West Mine Rock Stockpile Sump 2 sampled on October 8th, 2016 totaling a discharge of 33mg/l TSS.
- SAC was called immediately upon discovery.
- The reporting Technician began an internal investigation as they were not directly involved in gathering this sample.

Cause

- The inspection of West Mine Rock Stockpile Sump 2 revealed that the dewatering pump being used had lost its floatation device on the intake foot valve.
- Insufficient floatation of the dewatering pump intake foot valve allowed the intake foot valve to come to rest on the bottom of the sump, this allowed sediment to be introduced to the discharge as the water level in the sump receded.

Clean Up and Recovery

- Upon discovery and after SAC was called the reporting Technician took an NTU reading upstream and downstream of the discharge location in an attempt to identify any lingering affect.
- The upstream location at UTM NAD83 Zone 15U E431006 N5407717 had an NTU of 7.3, the downstream location at UTM NAD83 Zone 15U E419596 N5408080 had an NTU of 4.2. this

allows us to conclude, at that time no measurable effects were present in the Pinewood River and the TSS may not have reached the natural environment.

- The discharge location is approximately 100m from the Pinewood River. Therefore, the existing vegetation should have sufficiently removed sediment.
- Because the discharge was completed before this exceedance was discovered no clean up or recovery efforts could be made.

Preventative measures and schedule of implementation

- All dewatering pump intake foot valves will be inspected prior to and during discharge by dewatering crews and Environmental staff to ensure intake foot valves have proper floatation.
- Dewatering crews will be required to ensure pumping has creased before intake foot valves are at risk of contacting the bottom of the sump and introducing sediment.
- New Gold will be reviewing the current use of intake foot valves site wide and determining if improvements are nececssary.

Further Information and Comment

Water Quality Results prior to discharge:

Four samples were taken October 6th one in each corner of the West Mine Rock Stockpile Sump 2 between 8:15 and 8:45, TSS ranged from 7.5 mg/L to 9.0 mg/L

The discharge began on October 7th 15:30 and stopped on October 9th at 15:45.
The estimated volume released was 1,615,403 litres.

Water Quality Results at discharge:

Sample taken October 7th at 16:46 had TSS of 6.5 mg/L
Sample taken October 8th at 07:10 had TSS of 33.0 mg/L

If you have any questions regarding the spill report, please contact the undersigned.

Regards,

Nathan Baird
Environmental Technician
Nathan.Baird@newgold.com
M: 1-807-271-3190

CC: Andrea Doherty (DFO), Dan Mcdonell (EC), Shawn Michajluk (EC), Karli Allen (MNRF).

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November 30, 2016

Ray Boivin
Senior Environmental Officer
Ministry of the Environment and Climate Change
808 Robertson St.
Kenora ON P9N 1X9
Via email: Ray.Boivin@ontario.ca

Dear Mr. Boivin,

RE: Spill Report for SAC Reference #6347-AG4JZH,

Further to the notification to the Spills Action Centre (SAC) Reference #6347-AG4JZH regarding a Total Suspended Solids (TSS) exceedance from a mine effluent discharge into the natural environment on November 27th of 2016, the following report is submitted to the Ministry of the Environment and Climate Change (MOECC), consistent with requested reporting notifications to SAC and in accordance with our ECA approval #5781-9VJQ2J.

Discovery

- During routine monitoring of ALS WEBTRIEVE™ on November 27th, 2016 a New Gold Environmental Technician noted the Plant Site Polishing Pond discharge from November 23, 2016 has a calculated TSS value of 46 mg/L.
- SAC was called immediately upon discovery.
- The reporting Technician contacted ALS laboratory in Thunder Bay and requested a re-run of the sample.

Cause

- Between when the pre-discharge sample was taken and when discharge took place, ice formed on the surface of the Plant Site Polishing Pond. Rainfall/snow melt deposited sediment on the surface of this ice during discharge. It was also noted during the investigation that there was a high amount of construction activity directly East of the pond before and during discharge.
- As the discharge lowered the water level in the pond the receding sediment laden ice caused the sediment to mobilize and report to the intake of the pump.
- During sampling, the discharge was noted to be surging, indicating that the intake may be drawing air and close to the end of the discharge. It is possible that sediment could have entered the discharge in this manner.

Clean Up and Recovery

- Discharge sample test results where received after discharge was complete.
- Routine monitoring of the closest receiving water body (West Creek) had a turbidity of 2.2 NTU on the day the exceeding sample was taken. The discharge itself had a turbidity of 10.4 NTU. Due to the large size of the total suspended solids observed in the certified lab, it is unlikely that the sediment made it to the nearest waterbody.
- The discharge point is an estimated 700 meters overland from the nearest receiving water body which is West Creek. The water then travels approximately 2.5 kilometers and reports to the Pinewood River.
- A fish salvage program was performed in West Creek within the last month and deemed complete before the time of discharge.
- No clean up or recovery was or could have been attempted for the above mentioned reasons.
- However, an acute toxicity test was taken with this discharge and will determine if it would have been toxic to fish.

Preventative measures and schedule of implementation

- Better communication between sampling staff and those responsible for the logistics of dewatering efforts needs to occur to ensure a reprehensive sample can be taken.
- To prevent ice buildup on ponds and the possible mobilization of sediment in relation to ice, we are exploring options such as bubblers and agitators.
- Currently all water being discharged from the plant site has been diverted to the South Pond where it will be tested to ensure it meets water quality objectives and discharged to the environment in a manner that is free from the influence of ice.

Further Information and Comment

Water Quality Results prior to discharge:

Sample taken November 17th at 10:20 had a TSS of 8 mg/L

The discharge began on November 22nd at 1700 and stopped on November 23rd at 1730.
The estimated volume released was 4,000,000 litres.

Water Quality Results at discharge:

Sample taken November 23rd at 10:35 had TSS of 46 mg/L.

Discharge water was tested at the time of sampling for turbidly with a field meter and revealed a turbidity of 10.4 NTU and no visual indication of high TSS was noted at this time. The discharge line did begin to surge before sampling was complete but the field turbidity was within acceptable limits, no change in water color occurred, and no concerns were raised at the time of sampling. A turbidity reading was taken during the day of this discharge as part of our regular monitoring at the receiving water body, West Creek, indicating a turbidity of 2.2 NTU. Upon discovering the laboratory result of 46 mg/L of TSS the lab was asked to re-run the test to check for a lab error. The results of the re-run confirmed the original results,

however the photos of the sample bottles and filters used in the test show large granular particulate which would have dropped out of the discharge flow quickly after entering the environment (see attached photos). Therefore, this large granular particulate must have been present as a result of the intake coming into contact with the bottom of the pond and the influence of the sediment laden ice as the water level in the pond dropped.

An acute toxicity test was taken with this sample, however the test remains in process and will not be complete before this letter is due. We will make the results of this test known to you as soon as we have received them.

If you have any questions regarding the spill report, please contact the undersigned.

Regards,

Nathan Baird
Environmental Technician
Nathan.Baird@newgold.com
M: 1-807-271-3190

CC: Andrea Doherty (DFO), Dan Mcdonell (EC), Adam Scheepers (EC), Karli Allen (MNRF).

Photo 1

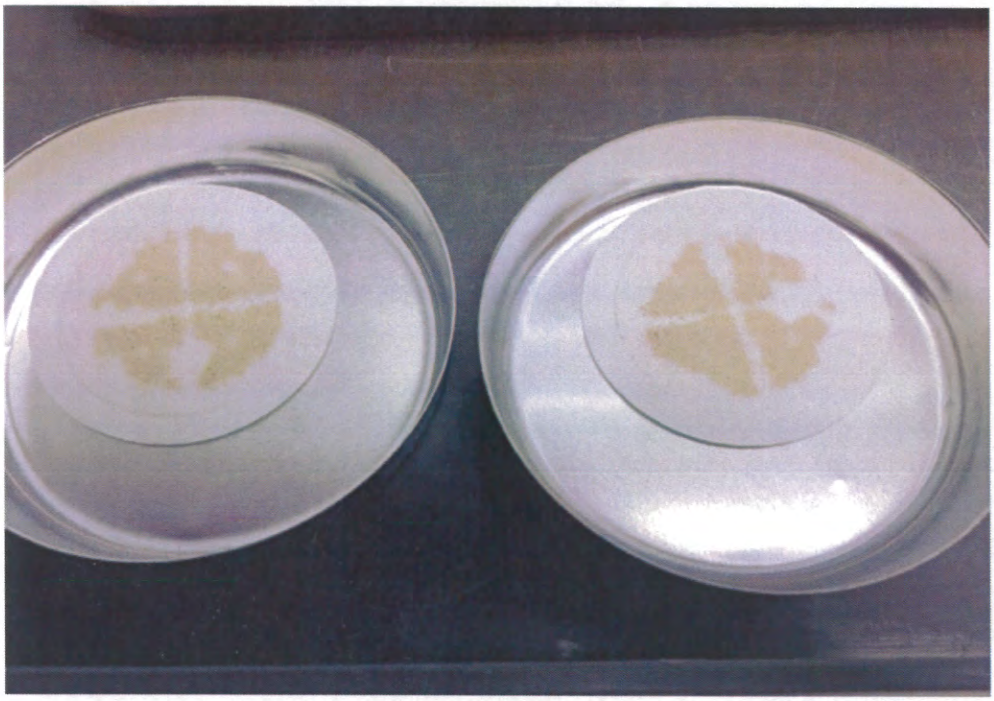

Photo 1 shows "nugget effect" from large granular particulate on glass filters used in TSS sampling.

Photo was taken after re-run test completed at ALS labs in Thunder Bay on November 28th 2016 by ALS labs staff.

Photo 2

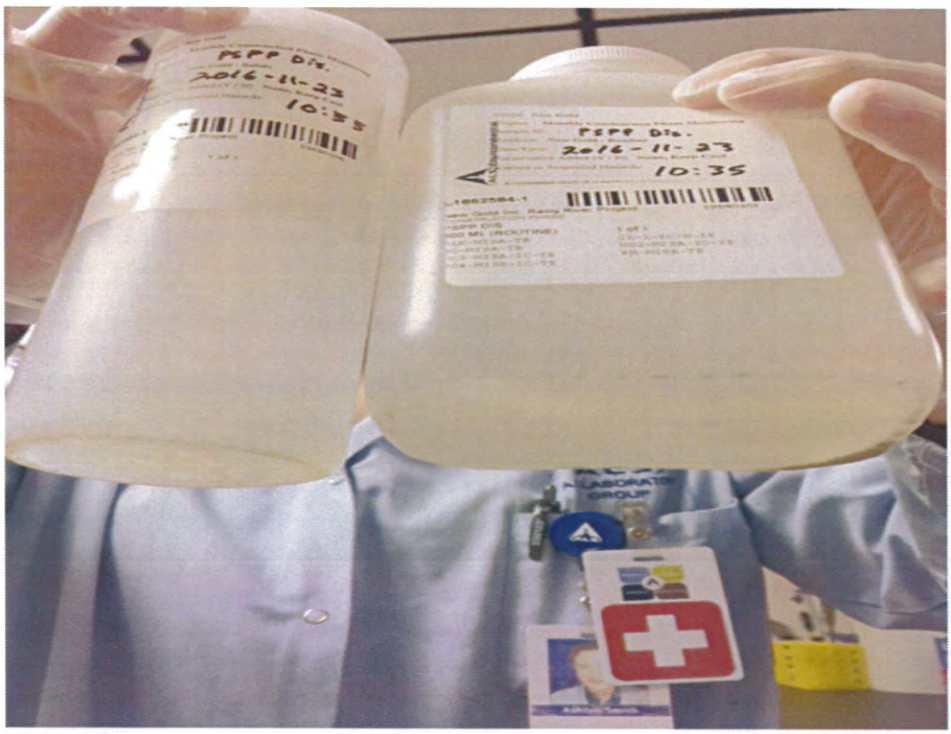

Photo 2 shows large granular particulate settled in the bottom of sample bottles.

Photo was taken after re-run test completed at ALS labs in Thunder Bay on November 28th 2016 by ALS labs staff.

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January 6th 2017

Adam Scheepers, Fishery Inspector
Environmental Enforcement Directorate
Enforcement Branch – Ontario Region
Environment Canada
335 River Rd
Ottawa, Ontario K1V 1C7
Canada

Ray Boivin, Senior Environmental Officer
Ministry of the Environment
and Climate Change
808 Robertson St.
Kenora, Ontario P9N 1X9
Canada

Dear Mr. Scheepers and Mr. Boivin,

RE: Exceedance of MMER Rainbow Trout Acute Toxicity (SAC Ref#7425-AHBTWL)

Further to the phone communication on Jan 5th 2017, regarding an exceedance of water quality in acute lethality, in water discharged from Dec 28th to Dec 30th from Sump 4 (Licensed MMER Discharge Location FDP #3), the following report is being submitted to Environment Canada.

As per the Environmental Compliance Approval (ECA #5781-9VJQ2J) the Spill Action Center was contacted on Jan 5th 2017 (SAC Ref#7425-AHBTWL).

Discovery

Prior to discharge the Sump 4 water was sampled as part of the regular procedure for temperature, dissolved oxygen, ammonia, pH and conductivity. Also as part of our regular procedure, an additional sample was sent prior to discharge for metals content. The analysis found that all the parameters were within regular range and under all limits (both Environmental Compliance Approval, MOECC and MMER) and based on the analysis the water was cleared for discharge.

Under the MMER, one sample from each licensed discharge point is required on a monthly basis and tested for acute lethality. The MMER is based off of a constant discharge model however Sump 4 (FDP#3) does not constantly discharge. To ensure conformance to the MMER requirement (1 sample per discharge location per month) sampling for acute lethality occurs for every discharge, including discharges from Sump 4.

The results of 60% mortality in rainbow trout in undiluted effluent were received on Jan 5th 2017 from samples taken on Dec 29th 2016 (this is the regular processing time for this test).

Cause

The cause of the mortality is still under investigation. The circumstances around this Sump 4 discharge differ from previous discharges in that;

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- The discharge was the first time the Baker Ammonia Treatment Unit had been used. The Baker Unit was commissioned and the water was tested for un-ionized ammonia, total suspended solids, temperature, dissolved oxygen, pH and metals. All results of the analysis indicated the water was of acceptable quality to discharge.

- Due to the holiday season, the lab that previously conducted the acute lethality tests was not available and a different lab was used.

On Going Causation Analysis

- A second set of samples were taken at approximately 3 pm on Jan 5th 2017 from the remaining water in Sump 4. Field parameters (temperature, pH, conductivity, dissolved oxygen and turbidity) were taken and were within regular operating levels and below regulatory limits.
- An additional acute lethality analysis will be conducted at the lab used regularly.
- Should the second acute lethality analysis exceed the mortality limits, a Toxicity Identification Evaluation (TIE) test will be conducted at the regular lab to identify the cause of the mortality. The sample will then also be analyzed for all the previously tested parameters.

A letter summarizing the results of the causation analysis will follow this report once the analysis is complete by Jan 20th 2017.

In the meantime, if you have any questions regarding this report of the on-going causation analysis, please contact the undersigned or Darrell Martindale (Environment Department Manager) at darrell.martindale@newgold.com.

Kind Regards,

P.P.

Robyn Gaebel, P.Eng
Environmental Specialist
robyn.gaebel@newgold.com

cc: Ray Boivin, MOECC; ray.boivin@ontario.ca
Paula Spencer, MOECC; paula.spencer@ontario.ca
Gary Cooper, DFO; gary.cooper@dfo-mpo.gc.ca

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January 20th 2017

Adam Scheepers, Fishery Inspector
Environmental Enforcement Directorate
Enforcement Branch – Ontario Region
Environment Canada
335 River Rd
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Canada

Ray Boivin, Senior Environmental Officer
Ministry of the Environment
and Climate Change
808 Robertson St.
Kenora, Ontario P9N 1X9
Canada

Dear Mr. Scheepers and Mr. Boivin,

RE: Exceedance of MMER Rainbow Trout Acute Toxicity (SAC Ref#7425-AHBTWL)

Further to the letter provided on Jan 6th 2017, regarding an exceedance of water quality in acute lethality, and causation analysis, the following report is being submitted to Environment Canada.

The sample for the second (2) acute lethality analysis was frozen in transit, making the result invalid. The analysis on sample 2 was completed however and there were no mortalities in rainbow trout or daphnia magna.

A third (3) sample for acute lethality was taken when notification of the frozen sample was received on 14th Jan 2017. Sample 3 was sent to the lab regularly used and the acute lethality analysis is ongoing. The field parameters (temperature, pH, conductivity, dissolved oxygen, unionized ammonia and turbidity) were taken and were within regular operating levels and below regulatory limits.

Should the third acute lethality analysis exceed the mortality limits, a Toxicity Identification Evaluation (TIE) test will be conducted at the regular lab to identify the cause of the mortality. The sample will then also be analyzed for all the previously tested parameters.

Another letter summarizing the results of the causation analysis will follow this report once the third analysis is complete by Feb 3rd 2017.

In the meantime, if you have any questions regarding this report of the on-going causation analysis, please contact the undersigned or Darrell Martindale (Environment Department Manager) at darrell.martindale@newgold.com.

Kind Regards,

Robyn Gaebel, P.Eng
Environmental Specialist
robyn.gaebel@newgold.com

cc:
Ray Boivin, MOECC; ray.boivin@ontario.ca
Paula Spencer, MOECC; paula.spencer@ontario.ca
Gary Cooper, DFO; gary.cooper@dfo-mpo.gc.ca

Memorandum

To: Ray Boivin, Senior Environmental Officer, Kenora Area, MOECC

From: Darrell Martindale, Manager, Environment

Date: February 26, 2016

Re: **Monthly Surface Water Quality Results Summary – January 2016**

The following document has been provided consistent with Environmental Compliance Approval (ECA) # 5781-9VJQ2J, section 13(3) issued May 8, 2015. The purpose of the report is to provide a summary of monitoring activities related to the approved works.

Monitoring for December 2015 was applicable to the stage of project development;

- Construction on the Plant Site and Crusher Area Temporary Treatment Ponds was completed at the end of July;
- Surface water sampling was conducted on January 27, 2015; and
- Construction discharge sampling for the Plant Site and Crusher Area Temporary Treatment Ponds was not conducted as no discharge took place in the month of January, 2016.
- Construction discharge sampling for In-Pit Sump 3 was not conducted as no discharge took place in the month of January, 2016.

1.0 Plant Site and Crusher Area Sediment Ponds

The Plant Site and Crusher Area Temporary Sediment Ponds commenced construction on May 17, 2015. Prior to that time sediment and erosion control measures were put in place beginning on 5 May which included silt fencing and settling ponds. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. A single-polymer flocculant system was installed and commissioned on 15 July, 2015. This system was not utilized in January, 2016 due to frozen conditions therefore a discharge did not take place.

1.1 In-Pit Sump 3

In-Pit Sump 3 commenced construction on August 20, 2015. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. No water was pumped to this sump due to frozen conditions and therefore no discharge took place in the month of January, 2016.

2.0 Effluent Sampling and Results

No sampling of the construction phase works occurred in January, 2016 due to frozen conditions. The sampling is to provide indication of performance of works relative to predicted performance and allow

for water treatment to be tailored based on inputs. No discharges occurred in the month of January, 2016.

3.0 Surface Water Sampling

Surface water sampling was conducted on January 27, 2016. The following sites were not sampled for the given reasons;

- SW23, SW24, SW28 and SW29 do not require sampling as of yet as the triggering milestones have not yet been reached with construction.
- SW25 and SW26, although identified as requiring sampling within one month of the receipt of the ECA, are located along the planned route of the West Creek Diversion which has yet to be commissioned.
- SW21 due to site inaccessibility.

Sampling was conducted at the remaining sites following MISA protocols.

3.1 Summary of Analysis

Surface water sampling results met PWQO and CEQG levels except for total iron, total aluminum, turbidity, and total suspended solids at some sites in the Pinewood River, the Rainy River, Loslo Creek, and West Creek (Table 1). The sites were both upstream and downstream of the Project site and results are consistent with baseline results.

QA/QC procedures met expected controls (e.g., 20 % relative percent difference) except;

- Some field duplicate parameter pairs exceeded the RPD limit of 40%, although none of these parameter pairs exhibited concentrations greater than three times the detection limit. As a result, no implications to data quality are expected based on these exceedances.
- Dissolved concentrations of zinc exceeded total concentrations in SW20. The analytical laboratory has been queried as to the cause of this irregularity and its implications to data integrity. This remains under investigation by the laboratory. Given other parameters are within guidelines/objectives there is no concern relative to surface water quality.

4.0 Non-Routine Procedures

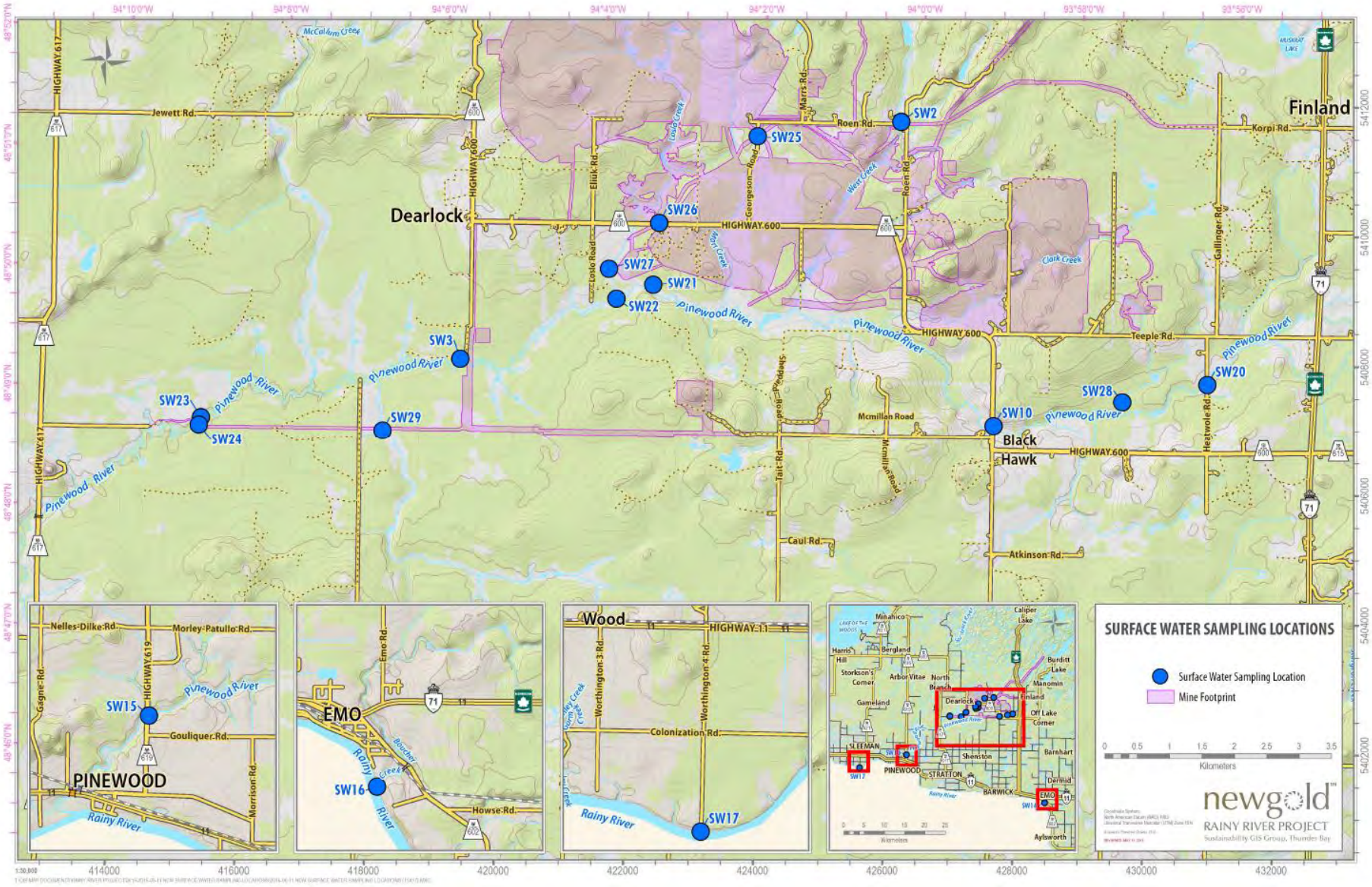
There were no non-routine calibration or maintenance procedures carried out on any major structure, equipment, apparatus, mechanism or thing forming a part of the sewage works during the reporting period.

5.0 Bypass or Upset Summary

No bypass or upset conditions occurred during the reporting period.

Table 2: Summary of Surface Water Sampling Results Where PWQO or CEQG Were Exceeded

Site	Water Body	Parameter	Sample Concentration (mg/L)	PWQO (mg/L)	CEQG (mg/L)	ECA (mg/L)	MISA Qualifier	Historic Avg (mg/L)	Historic Max (mg/L)	Historic Min (mg/L)	Historic Median (mg/L)
SW27	Loslo Creek	T-Al	0.091	0.075	0.1	-	-	-	-	-	-
SW27	Loslo Creek	T-Fe	1.510	0.3	0.3	-	-	-	-	-	-
SW2	West Creek	T-Al	0.203	0.075	0.1	-	-	0.11	0.62	0.02	0.08
SW2	West Creek	T-Fe	1.010	0.3	0.3	-	-	0.56	2.07	0.11	0.40
SW3	Pinewood River	Turbidity	14.4 NTU	7.909	-	-	-	13.55	84.3	0.7	8.62
SW3	Pinewood River	T-Al	0.487	0.075	0.1	-	-	0.36	2.77	0.0508	0.2625
SW3	Pinewood River	T-Fe	1.530	0.3	0.3	-	-	1.11	6.97	0.064	0.6885
SW10	Pinewood River	T-Al	0.186	0.075	0.1	-	-	0.8	32.3	0.292	0.1915
SW10	Pinewood River	T-Fe	1.180	0.3	0.3	-	-	1.70	42.3	0.287	0.623
SW15	Pinewood River	T-Al	0.170	0.075	0.1	-	-	0.68	4.95	0.05	0.46
SW15	Pinewood River	T-Fe	0.320	0.3	0.3	-	-	1.07	5.99	0.09	0.92
SW20	Pinewood River	T-Al	0.281	0.3	0.3	-	-	-	-	-	-
SW20	Pinewood River	T-Fe	1.570	0.3	0.3	-	-	-	-	-	-
SW21	Pinewood River	T-Al	0.098	0.075	0.1	-	-	-	-	-	-
SW21	Pinewood River	T-Fe	0.320	0.3	0.3	-	-	-	-	-	-
SW22a	Pinewood River	T-Al	0.180	0.075	0.1	-	-	-	-	-	-
SW22a	Pinewood River	T-Fe	1.310	0.3	0.3	-	-	-	-	-	-
SW16	Rainy River	T-Al	0.184	0.075	0.1	-	-	0.31	2.65	0.04	0.17
SW17	Rainy River	T-Al	0.0965	0.075	0.1	-	-	0.23	1.71	0.05	0.13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SW17
Dearlock
Finland
Black Hawk
PINEWOOD
EMO
Wood
HIGHWAY 600
HIGHWAY 617
HIGHWAY 619
HIGHWAY 11
Pinewood River
Rainy River
Jewett Rd.
Roen Rd.
Korpi Rd.
Teeple Rd.
Mcmillan Road
Caul Rd.
Atkinson Rd.
Howse Rd.
Colonization Rd.
Gouliquer Rd.
Morley-Patullo Rd.
Nelles-Dilke Rd.
SURFACE WATER SAMPLING LOCATIONS
Surface Water Sampling Location
Mine Footprint
Kilometers
RAINY RIVER PROJECT
Sustainability GIS Group, Thunder Bay

Memorandum

To: Ray Boivin, Senior Environmental Officer, Kenora Area, MOECC

From: Darrell Martindale, Manager, Environment

Date: March 28, 2016

Re: **Monthly Surface Water Quality Results Summary – February 2016**

The following document has been provided consistent with Environmental Compliance Approval (ECA) # 5781-9VJQ2J, section 13(3) issued May 8, 2015. The purpose of the report is to provide a summary of monitoring activities related to the approved works.

Monitoring for February 2016 was applicable to the stage of project development;

- Construction on the Plant Site and Crusher Area Temporary Treatment Ponds was completed at the end of July;
- Surface water sampling was conducted on February 24 and 29, 2016; and
- Construction discharge sampling for the Plant Site and Crusher Area Temporary Treatment Ponds was not conducted as no discharge took place in the month of February, 2016.
- Construction discharge sampling for In-Pit Sump 3 was not conducted as no discharge took place in the month of February, 2016.

1.0 Plant Site and Crusher Area Sediment Ponds

The Plant Site and Crusher Area Temporary Sediment Ponds commenced construction on May 17, 2015. Prior to that time sediment and erosion control measures were put in place beginning on 5 May which included silt fencing and settling ponds. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. A single-polymer flocculant system was installed and commissioned on 15 July, 2015. This system was not utilized in February, 2016 due to frozen conditions therefore a discharge did not take place.

1.1 In-Pit Sump 3

In-Pit Sump 3 commenced construction on August 20, 2015. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. No water was pumped to this sump due to frozen conditions and therefore no discharge took place in the month of February, 2016.

2.0 Effluent Sampling and Results

No sampling of the construction phase works occurred in February, 2016 due to frozen conditions. The sampling is to provide indication of performance of works relative to predicted performance and allow

for water treatment to be tailored based on inputs. No discharges occurred in the month of February, 2016.

3.0 Surface Water Sampling

Surface water sampling was conducted on February 24 and 29, 2016. The following sites were not sampled for the given reasons;

- SW23, SW24, SW28 and SW29 do not require sampling as of yet as the triggering milestones have not yet been reached with construction.
- SW25 and SW26, although identified as requiring sampling within one month of the receipt of the ECA, are located along the planned route of the West Creek Diversion which has yet to be commissioned.

Sampling was conducted at the remaining sites following MISA protocols.

3.1 Summary of Analysis

Surface water sampling results met PWQO and CEQG levels except for total iron and total aluminum at some sites in the Pinewood River, the Rainy River, Loslo Creek, and West Creek (Table 1). The sites were both upstream and downstream of the Project site and results are consistent with baseline results.

QA/QC procedures met expected controls (e.g., 20 % relative percent difference) except;

- Some field duplicate parameter pairs exceeded the RPD limit of 40%, although none of these parameter pairs exhibited concentrations greater than three times the detection limit. As a result, no implications to data quality are expected based on these exceedances.

4.0 Non-Routine Procedures

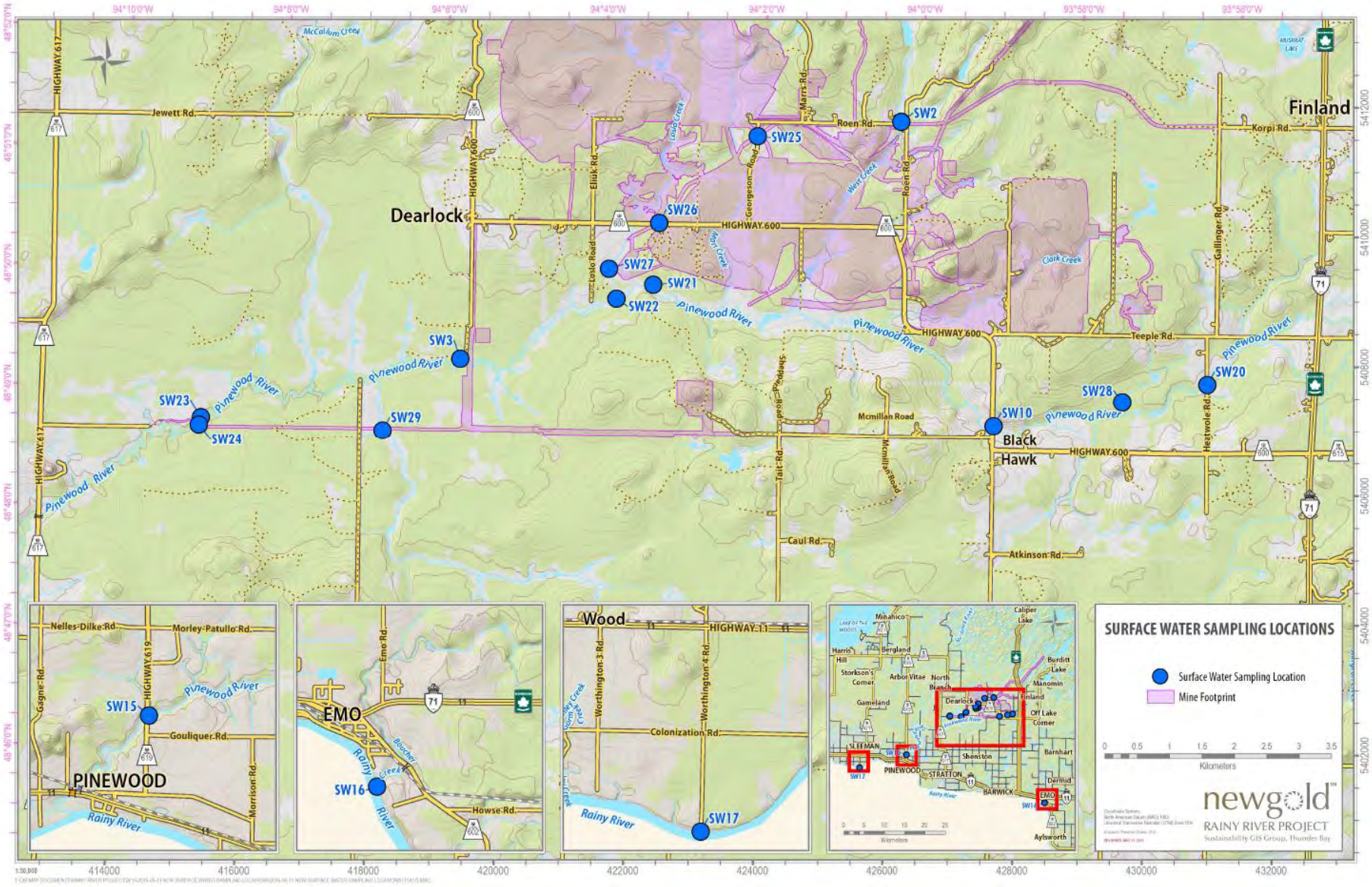
There were no non-routine calibration or maintenance procedures carried out on any major structure, equipment, apparatus, mechanism or thing forming a part of the sewage works during the reporting period.

5.0 Bypass or Upset Summary

No bypass or upset conditions occurred during the reporting period.

Table 2: Summary of Surface Water Sampling Results Where PWQO or CEQG Were Exceeded

Site	Water Body	Parameter	Sample Concentration (mg/L)	PWQO (mg/L)	CEQG (mg/L)	ECA (mg/L)	MISA Qualifier	Historic Avg (mg/L)	Historic Max (mg/L)	Historic Min (mg/L)	Historic Median (mg/L)
SW27	Loslo Creek	T-Al	0.11	0.075	0.1	-	-	-	-	-	-
SW27	Loslo Creek	T-Fe	1.51	0.3	0.3	-	-	-	-	-	-
SW2	West Creek	T-Al	0.081	0.075	0.1	-	-	0.11	0.62	0.02	0.08
SW2	West Creek	T-Fe	1.14	0.3	0.3	-	-	0.56	2.07	0.11	0.40
SW3	Pinewood River	T-Al	0.511	0.075	0.1	-	-	0.36	2.77	0.0508	0.2625
SW3	Pinewood River	T-Fe	2.05	0.3	0.3	-	-	1.11	6.97	0.064	0.6885
SW10	Pinewood River	T-Al	0.387	0.075	0.1	-	-	0.8	32.3	0.292	0.1915
SW10	Pinewood River	T-Fe	1.88	0.3	0.3	-	-	1.70	42.3	0.287	0.623
SW15	Pinewood River	T-Al	0.146	0.075	0.1	-	-	0.68	4.95	0.05	0.46
SW20	Pinewood River	T-Al	0.305	0.3	0.3	-	-	-	-	-	-
SW20	Pinewood River	T-Fe	1.35	0.3	0.3	-	-	-	-	-	-
SW21	Pinewood River	T-Al	0.23	0.075	0.1	-	-	-	-	-	-
SW21	Pinewood River	T-Fe	1.48	0.3	0.3	-	-	-	-	-	-
SW22a	Pinewood River	T-Al	0.193	0.075	0.1	-	-	-	-	-	-
SW22a	Pinewood River	T-Fe	1.58	0.3	0.3	-	-	-	-	-	-
SW17	Rainy River	T-Al	0.084	0.075	0.1	-	-	0.23	1.71	0.05	0.13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SW17
Dearlock
Finland
Black Hawk
PINEWOOD
EMO
Wood
HIGHWAY 600
HIGHWAY 617
HIGHWAY 619
HIGHWAY 11
Pinewood River
Rainy River
Jewett Rd.
Roen Rd.
Korpi Rd.
Teeple Rd.
Mcmillan Road
Caul Rd.
Atkinson Rd.
Howse Rd.
Colonization Rd.
Gouliquer Rd.
Morley-Patullo Rd.
Nelles-Dilke Rd.
SURFACE WATER SAMPLING LOCATIONS
Surface Water Sampling Location
Mine Footprint
Kilometers
RAINY RIVER PROJECT
Sustainability GIS Group, Thunder Bay

Memorandum

To: Ray Boivin, Senior Environmental Officer, Kenora Area, MOECC

From: Darrell Martindale, Manager, Environment

Date: May 2, 2016

Re: **Monthly Surface Water Quality Results Summary – March 2016**

The following document has been provided consistent with Environmental Compliance Approval (ECA) # 5781-9VJQ2J, section 13(3) issued May 8, 2015. The purpose of the report is to provide a summary of monitoring activities related to the approved works.

Monitoring for March 2016 was applicable to the stage of project development;

- Construction on the Plant Site and Crusher Area Temporary Treatment Ponds was completed at the end of July, 2015;
- Construction on In-Pit Sump 3 was completed at the beginning of September, 2015;
- Construction on In-Pit Sump 4 was completed at the beginning of March, 2016 and commissioning planned for April, 2016;
- Construction on Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2 began in October, 2015 and commissioning planned for May, 2016;
- Surface water sampling was conducted on March 23, 2016.
- Construction discharge sampling for the Plant Site and Crusher Area Temporary Treatment Ponds was conducted on March 17 and 24, 2016.
- Construction discharge sampling for In-Pit Sump 3 was not conducted as no discharge took place in the month of March, 2016.
- Construction discharge sampling from In-Pit Sump 4 was not conduscted as no discharge took place in the month of March, 2016.

1.0 Plant Site and Crusher Area Sediment Ponds

The Plant Site and Crusher Area Temporary Sediment Ponds commenced construction on May 17, 2015. Prior to that time sediment and erosion control measures were put in place beginning on 5 May which included silt fencing and settling ponds. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. A single-polymer flocculant system was installed and commissioned on 15 July, 2015. This system was not utilized in March, 2016 due to system being disconnected to prevent damage over the winter season.

1.1 In-Pit Sump 3

In-Pit Sump 3 commenced construction on August 20, 2015. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. No water

was pumped to this sump due to frozen conditions and therefore no discharge took place in the month of March, 2016.

1.2 In-Pit Sump 4

In-Pit Sump 4 commenced construction beginning of January, 2016. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. No Water was pumped from this sump due to completion occurring in the month of March, 2016.

1.3 Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2

Sumps 1 and 2 commenced construction in October, 2015 and part of the ditching system to catch runoff from the Overburden and West Mine Rock Stockpiles. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

2.0 Effluent Sampling and Results

Sampling of the construction phase works occurred at discharge on March 17 and 24, 2016 from the Process Plant and Crusher Area Temporary Sediment Ponds. The sampling is to provide indication of performance of works relative to predicted performance and allow for water treatment to be tailored based on inputs.

3.0 Surface Water Sampling

Surface water sampling was conducted on March 23, 2016. The following sites were not sampled for the given reasons;

- SW23, SW24, and SW29 do not require sampling as of yet as the triggering milestones have not yet been reached with construction.
- SW25 and SW26, although identified as requiring sampling within one month of the receipt of the ECA, are located along the planned route of the West Creek Diversion which has yet to be commissioned.

Sampling was conducted at the remaining sites following MISA protocols.

3.1 Summary of Analysis

Surface water sampling results met PWQO, CEQG and ECA levels except for total suspended solids, total iron and total aluminum at some sites in the Pinewood River, the Rainy River, Loslo Creek, and West Creek (Table 1). The sites were both upstream and downstream of the Project site and results are consistent with baseline results.

QA/QC procedures met expected controls (e.g., 20 % relative percent difference) except;

- Some field duplicate parameter pairs exceeded the RPD limit of 40%, although none of these parameter pairs exhibited concentrations greater than three times the detection limit. As a result, no implications to data quality are expected based on these exceedances.

4.0 Non-Routine Procedures

The field meter for water quality displayed incorrect numbers after the first two sites and recalibration was attempted twice. The certified lab results were used for these parameters as there was no back up field meter available as it was in for repairs at the time sampling occured.

5.0 Bypass or Upset Summary

During the day of March 21, 2016, Teeple Dam failed and released sediment into the environment. This plume of sediment travelled through Teeple Drain and was recorded at the confluence of the Teeple Drain and the Pinewood River. Monitoring continued upstream and downstream of this confluence to monitor the affect the sediment had on the natural system. Table 3 shows the results of that sampling.

Table 1: Summary of Surface Water Sampling Results Where PWQO, CEQG, or ECA Were Exceeded

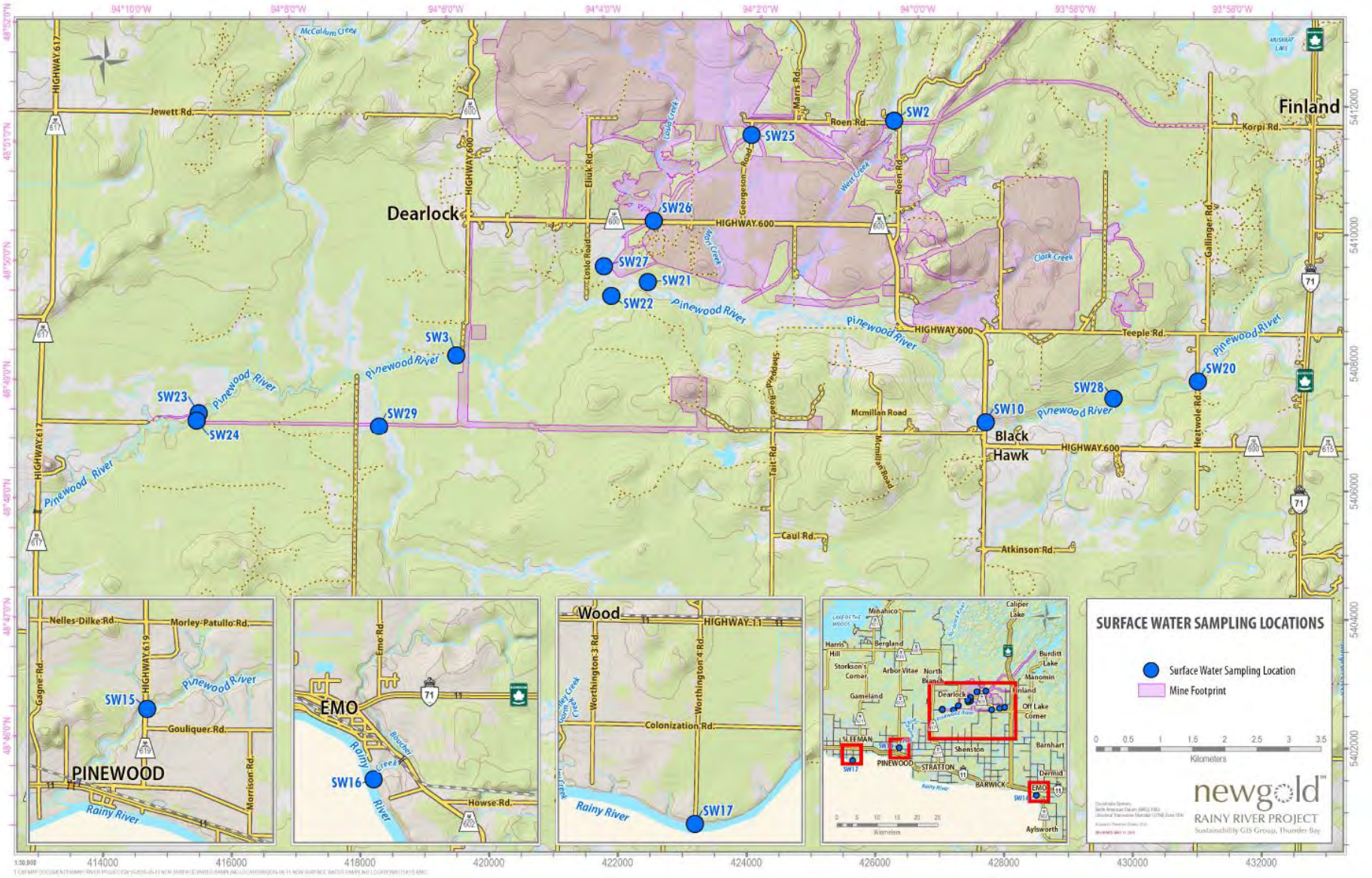
Site	Water Body	Parameter	Sample Concentration (mg/L)	PWQO (mg/L)	CEQG (mg/L)	ECA (mg/L)	MISA Qualifier	Historic Avg (mg/L)	Historic Max (mg/L)	Historic Min (mg/L)	Historic Median (mg/L)
SW27	Loslo Creek	T-Al	0.175	0.075	0.1	-	-	-	-	-	-
SW27	Loslo Creek	T-Fe	0.35	0.3	0.3	-	-	-	-	-	-
SW2	West Creek	T-Al	0.17	0.075	0.1	-	-	0.11	0.62	0.02	0.08
SW3	Pinewood River	T-Al	0.465	0.075	0.1	-	-	0.36	2.77	0.0508	0.2625
SW3	Pinewood River	T-Fe	0.64	0.3	0.3	-	-	1.11	6.97	0.064	0.6885
SW10	Pinewood River	T-Al	0.579	0.075	0.1	-	-	0.8	32.3	0.292	0.1915
SW10	Pinewood River	T-Fe	0.66	0.3	0.3	-	-	1.70	42.3	0.287	0.623
SW15	Pinewood River	T-Al	0.564	0.075	0.1	-	-	0.68	4.95	0.05	0.46
SW15	Pinewood River	T-Fe	0.78	0.3	0.3	-	-	1.07	5.99	0.09	0.92
SW20	Pinewood River	T-Al	0.317	0.3	0.3	-	-	-	-	-	-
SW20	Pinewood River	T-Fe	0.460	0.3	0.3	-	-	-	-	-	-
SW21	Pinewood River	T-Al	0.53	0.075	0.1	-	-	-	-	-	-
SW21	Pinewood River	T-Fe	0.7	0.3	0.3	-	-	-	-	-	-
SW22a	Pinewood River	T-Al	0.445	0.075	0.1	-	-	-	-	-	-
SW22a	Pinewood River	T-Fe	0.62	0.3	0.3	-	-	-	-	-	-
SW16	Rainy River	TSS	25.5	-	-	15.0	-	16.51	159.00	2.00	8.00
SW16	Rainy River	T-Al	0.762	0.075	0.1	-	-	0.31	2.65	0.04	0.17
SW16	Rainy River	T-Fe	0.98	0.3	0.3	-	-	0.44	3.28	0.06	0.25
SW17	Rainy River	TSS	21	-	-	15.0	-	11.51	88.50	2.00	5.15
SW17	Rainy River	T-Al	0.084	0.075	0.1	-	-	0.23	1.71	0.05	0.13
SW17	Rainy River	T-Fe	1.3	0.3	0.3	-	-	0.35	1.95	0.08	

Table 2: Summary of Effluent Results for Construction Phase Works Discharge

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	March 17, 2016 Process Plant and Crusher Area Temporary Sediment Ponds (mg/L)	March 24, 2016 Process Plant and Crusher Area Temporary Sediment Ponds (mg/L)
Total Suspended Solids	30	15	9.0	7.4
Total Arsenic	0.034	0.017	0.0011	0.0008
Total Copper	0.028	0.014	0.0022	0.0036
Total Nickel	0.094	0.047	0.00166	0.0020
Total Lead	0.030	0.015	0.00265	0.0002
Total Zinc	0.348	0.174	0.106	0.0300
Un-ionized Ammonia	0.2	0.1	<0.001	<0.001
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethat (not greater than 50% mortality in undiluted effluent)		Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.4	6.0

Table 3: Summary of Total Suspended Solids monitoring at Teeple Drain – Pinewood River confluence

Sampling Location	March 21, 2016 Total Suspended Solids (mg/L)	March 23, 2016 Total Suspended Solids (mg/L)	March 25, 2016 Total Suspended Solids (mg/L)	March 27, 2016 Total Suspended Solids (mg/L)	March 29, 2016 Total Suspended Solids (mg/L)
Teeple Drain – Pinewood River Confluence (PWDT/Ph2)	26.0	10.5	22.5	6.0	5.5
Upstream (SW28/PR6)	7.0	5.5	2.5	3.0	4.0
Downstream (SW10/PR5)	13.5	12.5	6.0	10.0	9.0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Black Hawk
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SURFACE WATER SAMPLING LOCATIONS
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newgold
RAINY RIVER PROJECT
Sustainability GIS Group, Thunder Bay

Memorandum

To: Ray Boivin, Senior Environmental Officer, Kenora Area, MOECC

From: Darrell Martindale, Manager, Environment

Date: June 3, 2016

Re: **Monthly Surface Water Quality Results Summary – April 2016**

The following document has been provided consistent with Environmental Compliance Approval (ECA) # 5781-9VJQ2J, section 13(3) issued May 8, 2015. The purpose of the report is to provide a summary of monitoring activities related to the approved works.

Monitoring for April 2016 was applicable to the stage of project development;

- Construction on the Plant Site and Crusher Area Temporary Treatment Ponds was completed at the end of July, 2015;
- Construction on In-Pit Sump 3 was completed at the beginning of September, 2015;
- Construction on In-Pit Sump 4 was completed at the beginning of March, 2016 and commissioned in April, 2016;
- Construction on Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2 began in October, 2015 and commissioning planned for May, 2016;
- Surface water sampling was conducted on April 18, 2016.
- Construction discharge sampling for the Plant Site and Crusher Area Treatment Ponds was conducted on April 4, 12, 19, and 29, 2016.
- Construction discharge sampling for In-Pit Sump 3 was conducted on April 15, 2016.
- Construction discharge sampling for In-Pit Sump 4 was conducted on April 29, 2016.

1.0 Plant Site and Crusher Area Sediment Ponds

The Plant Site and Crusher Area Sediment Ponds commenced construction on May 17, 2015. Prior to that time sediment and erosion control measures were put in place beginning on 5 May which included silt fencing and settling ponds. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. A single-polymer flocculant system was installed and commissioned on 15 July, 2015. This system was utilized in April, 2016 due to elevated Total Suspended Solids.

1.1 In-Pit Sump 3

In-Pit Sump 3 commenced construction on August 20, 2015. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA.

1.2 In-Pit Sump 4

In-Pit Sump 4 commenced construction beginning of January, 2016. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA.

1.3 Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2

Sumps 1 and 2 commenced construction in October, 2015 and part of the ditching system to catch runoff from the Overburden and West Mine Rock Stockpiles. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

2.0 Effluent Sampling and Results

Sampling of the construction phase works occurred at discharge on April 4, 12, 19, and 29, 2016 from the Process Plant and Crusher Area Sediment Ponds and on April 15 and 29, 2016 from In Pit Sumps 3 and 4, respectively. The sampling is to provide indication of performance of works relative to predicted performance and allow for water treatment to be tailored based on inputs.

3.0 Surface Water Sampling

Surface water sampling was conducted on April 18, 2016. The following sites were not sampled for the given reasons;

- SW23, SW24, and SW29 do not require sampling as of yet as the triggering milestones have not yet been reached with construction.
- SW25 and SW26, although identified as requiring sampling within one month of the receipt of the ECA, are located along the planned route of the West Creek Diversion which has yet to be commissioned.
- SW28 due to property access issues with private land owner.

Sampling was conducted at the remaining sites following MISA protocols.

3.1 Summary of Analysis

Surface water sampling results met PWQO, CEQG and ECA levels except for total suspended solids, total iron and total aluminum at some sites in the Pinewood River, the Rainy River, Loslo Creek, and West Creek (Table 1). The sites were both upstream and downstream of the Project site and results are consistent with baseline results.

QA/QC procedures met expected controls (e.g., 20 % relative percent difference) except;

- Some field duplicate parameter pairs exceeded the RPD limit of 40%, although none of these parameter pairs exhibited concentrations greater than three times the detection limit. As a result, no implications to data quality are expected based on these exceedances.

4.0 Non-Routine Procedures

There were no non-routine calibration or maintenance procedures carried out on any major structure, equipment, apparatus, mechanism or thing forming a part of the sewage works during the reporting period.

5.0 Bypass or Upset Summary

No bypass or upset conditions occurred during the reporting period.

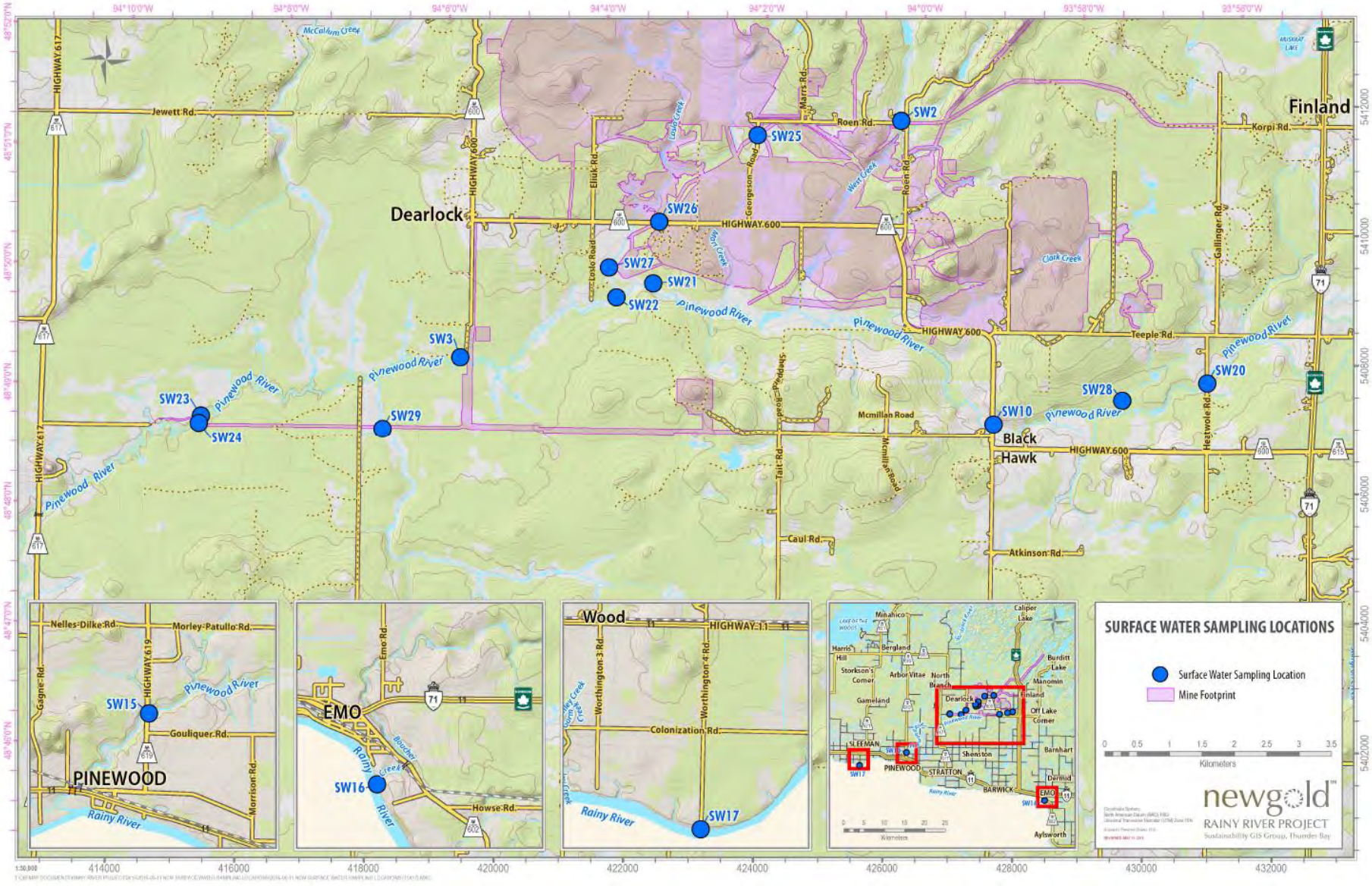
Table 1: Summary of Surface Water Sampling Results Where PWQO, CEQG, or ECA Were Exceeded

Site	Water Body	Parameter	Sample Concentration (mg/L)	PWQO (mg/L)	CEQG (mg/L)	ECA (mg/L)	MISA Qualifier	Historic Avg (mg/L)	Historic Max (mg/L)	Historic Min (mg/L)	Historic Median (mg/L)
SW27	Loslo Creek	T-Al	0.111	0.075	0.1	-	-	-	-	-	-
SW2	West Creek	T-Fe	0.31	0.3	0.3	-	-	-	-	-	-
SW2	West Creek	T-Al	0.142	0.075	0.1	-	-	0.11	0.62	0.02	0.08
SW3	Pinewood River	T-Al	0.555	0.075	0.1	-	-	0.36	2.77	0.0508	0.2625
SW3	Pinewood River	T-Fe	0.72	0.3	0.3	-	-	1.11	6.97	0.064	0.6885
SW10	Pinewood River	TSS	36.0	-	-	30	-	31.91	1340	2	7.3
SW10	Pinewood River	T-Al	0.943	0.075	0.1	-	-	0.8	32.3	0.292	0.1915
SW10	Pinewood River	T-Fe	1.17	0.3	0.3	-	-	1.70	42.3	0.287	0.623
SW15	Pinewood River	TSS	54.0	-	-	30	-	24.66	243	2	12
SW15	Pinewood River	T-Al	1.93	0.075	0.1	-	-	0.68	4.95	0.05	0.46
SW15	Pinewood River	T-Fe	2.00	0.3	0.3	-	-	1.07	5.99	0.09	0.92
SW20	Pinewood River	T-Al	0.415	0.3	0.3	-	-	-	-	-	-
SW20	Pinewood River	T-Fe	0.48	0.3	0.3	-	-	-	-	-	-
SW21a	Pinewood River	T-Al	0.216	0.075	0.1	-	-	-	-	-	-
SW21a	Pinewood River	T-Fe	0.34	0.3	0.3	-	-	-	-	-	-
SW22a	Pinewood River	T-Al	0.170	0.075	0.1	-	-	-	-	-	-
SW16	Rainy River	T-Al	0.23	0.075	0.1	-	-	0.31	2.65	0.04	0.17
SW16	Rainy River	T-Fe	0.36	0.3	0.3	-	-	0.44	3.28	0.06	0.25
SW17	Rainy River	T-Al	0.314	0.075	0.1	-	-	0.23	1.71	0.05	0.13
SW17	Rainy River	T-Fe	0.44	0.3	0.3	-	-	0.35	1.95	0.08	

Table 2: Summary of Effluent Results for Construction Phase Works Discharge

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	April 4, 2016 Process Plant and Crusher Area Temporary Sediment Ponds (mg/L)	April 12, 2016 Process Plant and Crusher Area Temporary Sediment Ponds (mg/L)	April 15, 2016 In Pit Sump 3 (mg/L)
Total Suspended Solids	30	15	13.5	9.5	41.5
Total Arsenic	0.034	0.017	0.0009	0.0011	0.0032
Total Copper	0.028	0.014	0.0045	0.0042	0.0059
Total Nickel	0.094	0.047	0.0025	0.0028	0.0047
Total Lead	0.030	0.015	0.00033	0.00047	0.00002
Total Zinc	0.348	0.174	0.0220	0.0135	0.0755
Un-ionized Ammonia	0.2	0.1	0.001	0.001	0.018
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethat (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.12	7.59	7.48

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	April 19, 2016 Process Plant and Crusher Area Temporary Sediment Ponds (mg/L)	April 29, 2016 Process Plant and Crusher Area Temporary Sediment Ponds (mg/L)	April 29, 2016 In Pit Sump 4 (mg/L)
Total Suspended Solids	30	15	30.5	7.5	9.5
Total Arsenic	0.034	0.017	0.0015	0.0012	0.0024
Total Copper	0.028	0.014	0.0046	0.0030	0.0017
Total Nickel	0.094	0.047	0.0033	0.0018	0.0041
Total Lead	0.030	0.015	0.00058	0.00011	0.00006
Total Zinc	0.348	0.174	0.0100	0.0040	0.0020
Un-ionized Ammonia	0.2	0.1	0.005	0.001	0.001
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethat (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			8.38	7.77	8.00


SURFACE WATER SAMPLING LOCATIONS
Surface Water Sampling Location
Mine Footprint
Kilometers
RAINY RIVER PROJECT
Sustainability GIS Group, Thunder Bay
Dearlock
Finland
Black Hawk
Wood
EMO
PINEWOOD
SW2
SW3
SW10
SW15
SW16
SW17
SW20
SW21
SW22
SW23
SW24
SW25
SW26
SW27
SW28
SW29
Pinewood River
Rainy River
HIGHWAY 600
HIGHWAY 617
HIGHWAY 619
HIGHWAY 11
Jewett Rd.
Roen Rd.
Korpi Rd.
Teeple Rd.
Mcmillan Road
Caul Rd.
Atkinson Rd.
Nelles-Dilke Rd.
Morley-Patullo Rd.
Gouliquer Rd.
Howse Rd.
Colonization Rd.

Memorandum

To: Ray Boivin, Senior Environmental Officer, Kenora Area, MOECC

From: Darrell Martindale, Manager, Environment

Date: July 16, 2016

Re: **Monthly Surface Water Quality Results Summary – May 2016**

The following document has been provided consistent with Environmental Compliance Approval (ECA) # 5781-9VJQ2J, section 13(3) issued May 8, 2015. The purpose of the report is to provide a summary of monitoring activities related to the approved works.

Monitoring for May 2016 was applicable to the stage of project development;

- Construction on the Plant Site and Crusher Area Temporary Treatment Ponds was completed at the end of July, 2015;
- Construction on In-Pit Sump 3 was completed at the beginning of September, 2015;
- Construction on In-Pit Sump 4 was completed at the beginning of March, 2016 and commissioned in April, 2016;
- Construction on Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2 began in October, 2015;
- Surface water sampling was conducted on May 18, 2016.
- Construction discharge sampling for the Plant Site and Crusher Area Treatment Ponds was conducted on May 2, 2016.
- Construction discharge sampling for In-Pit Sump 3 was conducted on May 9, 2016.
- Construction discharge sampling for In-Pit Sump 4 was conducted on May 30, 2016.

1.0 Plant Site and Crusher Area Sediment Ponds

The Plant Site and Crusher Area Sediment Ponds commenced construction on May 17, 2015. Prior to that time sediment and erosion control measures were put in place beginning on 5 May which included silt fencing and settling ponds. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. A single-polymer flocculant system was installed and commissioned on 15 July, 2015. This system was utilized in May, 2016 due to elevated Total Suspended Solids.

1.1 In-Pit Sump 3

In-Pit Sump 3 commenced construction on August 20, 2015. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA.

1.2 In-Pit Sump 4

In-Pit Sump 4 commenced construction beginning of January, 2016. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA.

1.3 Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2

Sumps 1 and 2 commenced construction in October, 2015 and part of the ditching system to catch runoff from the Overburden and West Mine Rock Stockpiles. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

2.0 Effluent Sampling and Results

Sampling of the construction phase works occurred at discharge on May 2, 2016 from the Process Plant and Crusher Area Sediment Ponds and on May 9 and 30, 2016 from In Pit Sumps 3 and 4, respectively. The sampling is to provide indication of performance of works relative to predicted performance and allow for water treatment to be tailored based on inputs.

3.0 Surface Water Sampling

Surface water sampling was conducted on May 18, 2016. The following sites were not sampled for the given reasons;

- SW23, SW24, and SW29 do not require sampling as of yet as the triggering milestones have not yet been reached with construction.
- SW25 and SW26, although identified as requiring sampling within one month of the receipt of the ECA, are located along the planned route of the West Creek Diversion which has yet to be commissioned.

Sampling was conducted at the remaining sites following MISA protocols.

3.1 Summary of Analysis

Surface water sampling results met PWQO, CEQG and ECA levels except for total iron and total aluminum at some sites in the Pinewood River, the Rainy River, and Teeple Drain (Table 1). The sites were both upstream and downstream of the Project site and results are consistent with baseline results.

QA/QC procedures met expected controls (e.g., 20 % relative percent difference) except;

- Some field duplicate parameter pairs exceeded the RPD limit of 40%, although none of these parameter pairs exhibited concentrations greater than three times the detection limit. As a result, no implications to data quality are expected based on these exceedances.

4.0 Non-Routine Procedures

There were no non-routine calibration or maintenance procedures carried out on any major structure, equipment, apparatus, mechanism or thing forming a part of the sewage works during the reporting period.

5.0 Bypass or Upset Summary

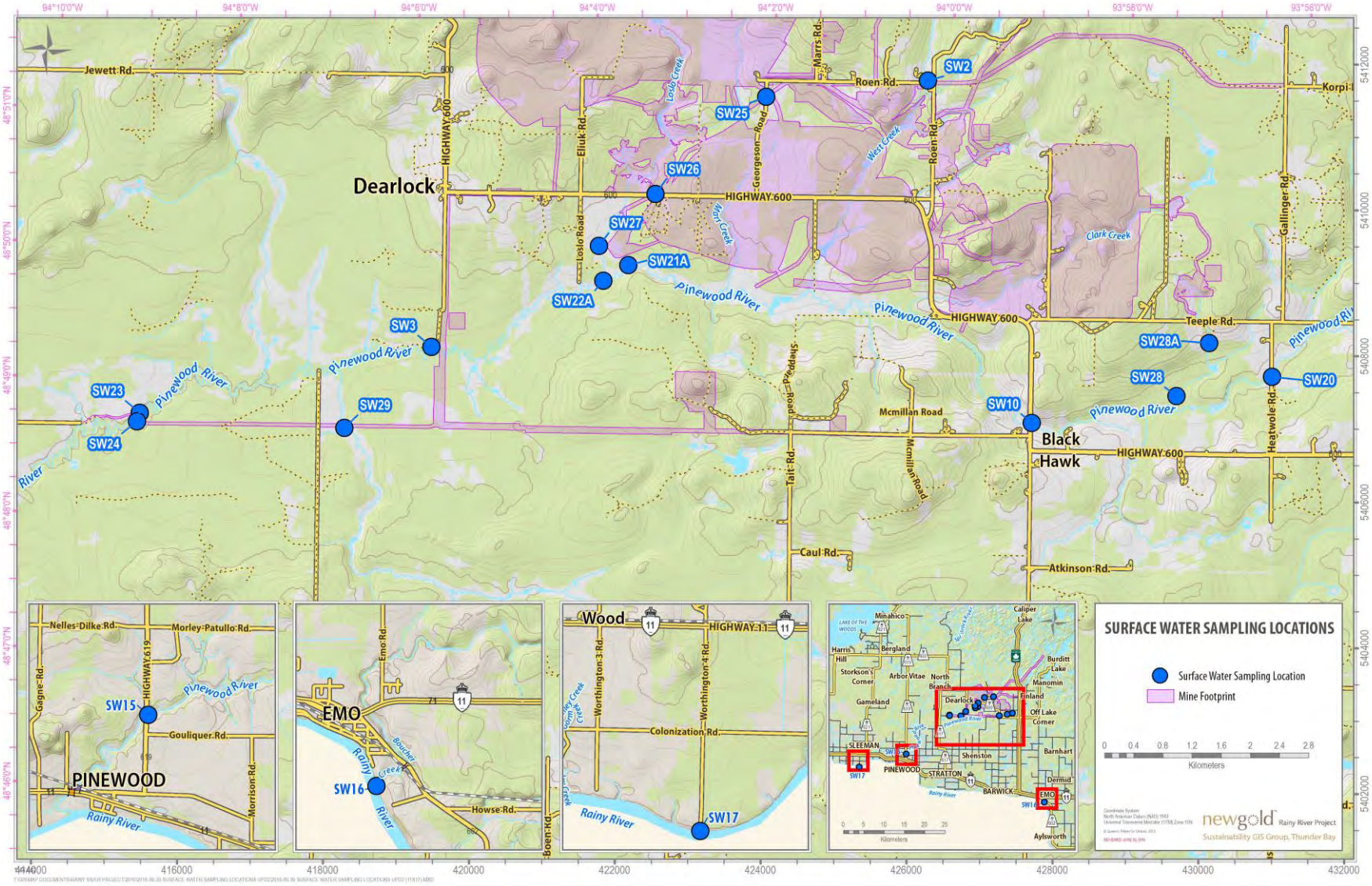
No bypass or upset conditions occurred during the reporting period.

Table 1: Summary of Surface Water Sampling Results Where PWQO, CEQG, or ECA Were Exceeded

Site	Water Body	Parameter	Sample Concentration (mg/L)	PWQO (mg/L)	CEQG (mg/L)	ECA (mg/L)	MISA Qualifier	Historic Avg (mg/L)	Historic Max (mg/L)	Historic Min (mg/L)	Historic Median (mg/L)
SW28	Teeple Drain	T-Al	0.132	0.075	0.1	-	-	-	-	-	-
SW3	Pinewood River	T-Al	0.255	0.075	0.1	-	-	0.36	2.77	0.0508	0.2625
SW3	Pinewood River	T-Fe	0.51	0.3	0.3	-	-	1.11	6.97	0.064	0.6885
SW10	Pinewood River	T-Al	0.182	0.075	0.1	-	-	0.8	32.3	0.292	0.1915
SW10	Pinewood River	T-Fe	0.49	0.3	0.3	-	-	1.70	42.3	0.287	0.623
SW15	Pinewood River	T-Al	0.722	0.075	0.1	-	-	0.68	4.95	0.05	0.46
SW15	Pinewood River	T-Fe	1.06	0.3	0.3	-	-	1.07	5.99	0.09	0.92
SW21a	Pinewood River	T-Al	0.078	0.075	0.1	-	-	-	-	-	-
SW21a	Pinewood River	T-Fe	0.35	0.3	0.3	-	-	-	-	-	-
SW16	Rainy River	T-Al	0.109	0.075	0.1	-	-	0.31	2.65	0.04	0.17
SW17	Rainy River	T-Al	0.149	0.075	0.1	-	-	0.23	1.71	0.05	0.13
SW17	Rainy River	T-Fe	0.31	0.3	0.3	-	-	0.35	1.95	0.08	

Table 2: Summary of Effluent Results for Construction Phase Works Discharge

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	May 2, 2016 Process Plant and Crusher Area Sediment Ponds (mg/L)	May 9, 2016 In Pit Sump 3 (mg/L)	May 30, 2016 In Pit Sump 4 (mg/L)
Total Suspended Solids	30	15	16.5	3.5	3.5
Total Arsenic	0.034	0.017	0.0014	0.0042	0.0034
Total Copper	0.028	0.014	0.0032	0.0010	0.001
Total Nickel	0.094	0.047	0.0020	0.0032	0.0028
Total Lead	0.030	0.015	0.00031	0.00004	0.00002
Total Zinc	0.348	0.174	0.0040	0.0035	0.002
Un-ionized Ammonia	0.2	0.1	0.002	0.339	0.526
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethat (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			8.03	8.49	8.64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Dearlock
HIGHWAY 600
Roen Rd.
Korpi
Eliuk Rd.
Loslo Road
Georgeson Road
Marris Rd.
Gallinger Rd.
Teeple Rd.
Pinewood River
Clark Creek
West Creek
Mart Creek
SW2
SW3
SW10
SW15
SW16
SW17
SW20
SW21A
SW22A
SW23
SW24
SW25
SW26
SW27
SW28
SW28A
SW29
Mcmillan Road
Black Hawk
Tait Rd.
Caul Rd.
Atkinson Rd.
Heatwole Rd.
Sheppard Road
Nelles Dilke Rd.
Morley Patullo Rd.
HIGHWAY 619
Gagne Rd.
Gouliquer Rd.
Morrison Rd.
PINEWOOD
Rainy River
EMO
Emo Rd.
Howse Rd.
Boen Rd.
Wood
HIGHWAY 11
Worthington 3 Rd.
Worthington 4 Rd.
Colonization Rd.
Minahico
Caliper Lake
Harris Hill
Bergland
Storkson's Corner
Arbor Vitae
North Branch
Burditt Lake
Manomin
Finland
Gameland
Off Lake Corner
SLEEMAN
Shenston
Barnhart
STRATTON
Dermid
BARWICK
Aylsworth
SURFACE WATER SAMPLING LOCATIONS
Surface Water Sampling Location
Mine Footprint
0 0.4 0.8 1.2 1.6 2 2.4 2.8
Kilometers
newgold Rainy River Project
Sustainability GIS Group, Thunder Bay
94°10'0"W
94°8'0"W
94°6'0"W
94°4'0"W
94°2'0"W
94°0'0"W
93°58'0"W
93°56'0"W
48°51'0"N
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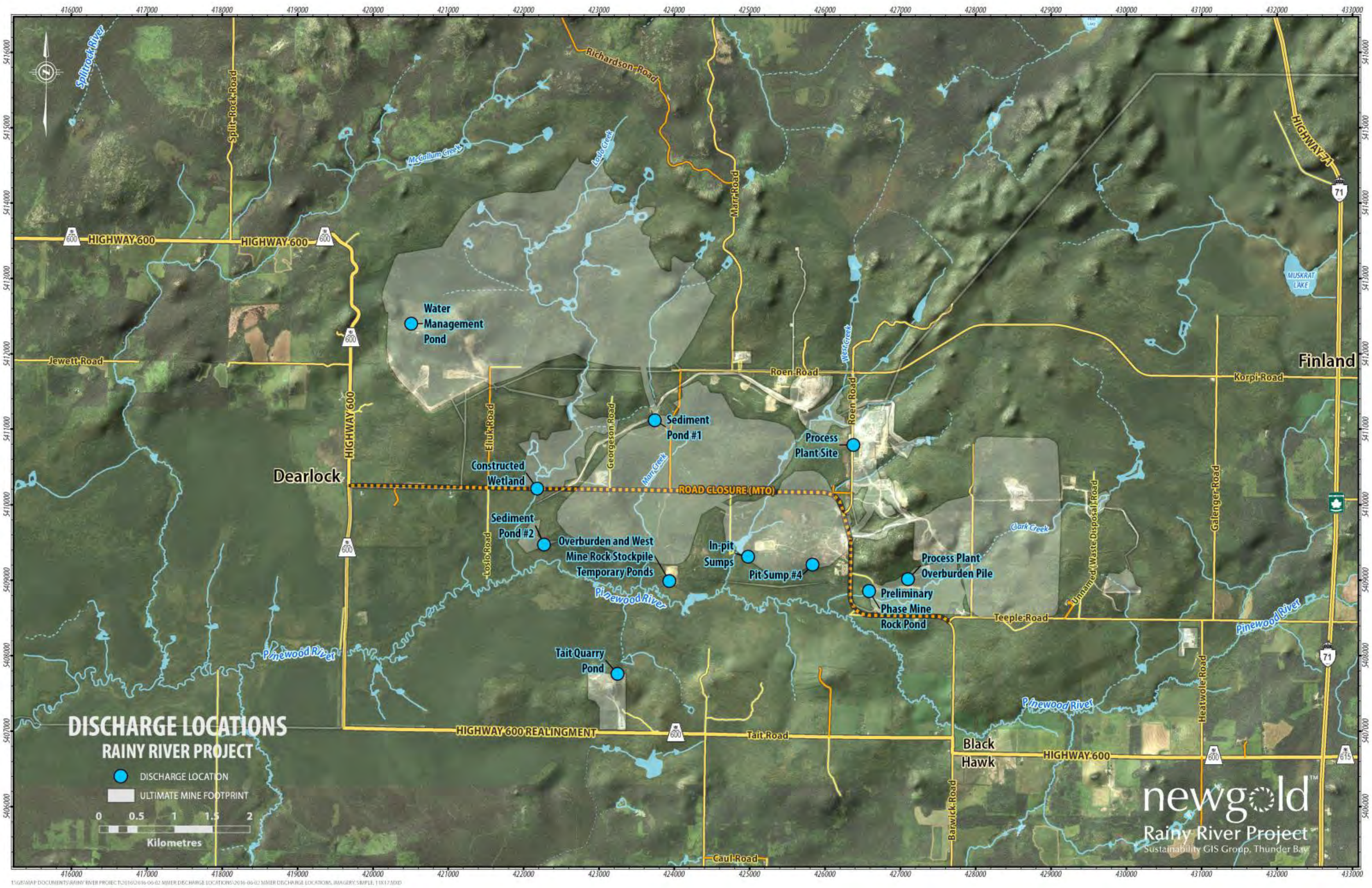

DISCHARGE LOCATIONS
RAINY RIVER PROJECT
DISCHARGE LOCATION
ULTIMATE MINE FOOTPRINT
Kilometres
Water Management Pond
Sediment Pond #1
Process Plant Site
Constructed Wetland
Sediment Pond #2
Overburden and West Mine Rock Stockpile Temporary Ponds
In-pit Sumps
Pit Sump #4
Process Plant Overburden Pile
Preliminary Phase Mine Rock Pond
Tait Quarry Pond
ROAD CLOSURE (MTO)
Dearlock
Finland
Black Hawk
HIGHWAY 600
HIGHWAY 600 REALIGNMENT
HIGHWAY 71
Roen Road
Korpi Road
Teeple Road
Tait Road
Caul Road
Jewett Road
Richardson Road
Pinewood River
MUSKRAT LAKE
newgold
Rainy River Project
Sustainability GIS Group, Thunder Bay

Memorandum

To: Ray Boivin, Senior Environmental Officer, Kenora Area, MOECC

From: Darrell Martindale, Manager, Environment

Date: August 8, 2016

Re: **Monthly Surface Water Quality Results Summary – June 2016**

The following document has been provided consistent with Environmental Compliance Approval (ECA) # 5781-9VJQ2J, section 13(3) issued May 8, 2015. The purpose of the report is to provide a summary of monitoring activities related to the approved works.

Monitoring for June 2016 was applicable to the stage of project development;

- Construction on the Plant Site and Crusher Area Temporary Treatment Ponds was completed at the end of July, 2015;
- Construction on In-Pit Sump 3 was completed at the beginning of September, 2015;
- Construction on In-Pit Sump 4 was completed at the beginning of March, 2016 and commissioned in April, 2016;
- Construction on Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2 began in October, 2015;
- Construction on the Process Plant Overburden Pile (Mine Rock Pond Polishing Pond) was completed at the end of July 2015;
- Surface water sampling was conducted on June 22, 2016.
- Construction discharge sampling for the Plant Site and Crusher Area Treatment Ponds was conducted on June 30, 2016.
- Construction discharge sampling for the Process Plant Overburden Pile (Mine Rock Pond Polishing Pond) was conducted on June 6, 2016.
- Construction discharge sampling for In-Pit Sump 3 was conducted on June 27, 2016.
- Construction discharge sampling for In-Pit Sump 4 was conducted on June 30, 2016.

1.0 Plant Site and Crusher Area Sediment Ponds

The Plant Site and Crusher Area Sediment Ponds commenced construction on May 17, 2015. Prior to that time sediment and erosion control measures were put in place beginning on 5 May which included silt fencing and settling ponds. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. A single-polymer flocculant system was installed and commissioned on 15 July, 2015. This system was not utilized in June, 2016 due to equipment malfunctions.

1.1 In-Pit Sump 3

In-Pit Sump 3 commenced construction on August 20, 2015. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA.

1.2 In-Pit Sump 4

In-Pit Sump 4 commenced construction beginning of January, 2016. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA.

1.3 Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2

Sumps 1 and 2 commenced construction in October, 2015 as part of the ditching system to catch runoff from the Overburden and West Mine Rock Stockpiles. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

1.4 Process Plant Overburden Pile (Mine Rock Sediment and Polishing Ponds)

Mine Rock Sediment and Polishing Ponds commenced construction at the beginning of 2015 as part of the ditching system to catch runoff from the Process Plant Overburden Stockpile. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

2.0 Effluent Sampling and Results

Sampling of the construction phase works occurred at discharge on June 30, 2016 from the Process Plant and Crusher Area Sediment Ponds, on June 27 and 30, 2016 from In Pit Sumps 3 and 4, respectively, and on June 6, 2016 from the Mine Rock Sediment and Polishing Ponds. The sampling is to provide indication of performance of works relative to predicted performance and allow for water treatment to be tailored based on inputs.

3.0 Surface Water Sampling

Surface water sampling was conducted on June 22, 2016. The following sites were not sampled for the given reasons;

- SW23, SW24, and SW29 do not require sampling as of yet as the triggering milestones have not yet been reached with construction.
- SW25 and SW26, although identified as requiring sampling within one month of the receipt of the ECA, are located along the planned route of the West Creek Diversion which has yet to be commissioned.

Sampling was conducted at the remaining sites following MISA protocols.

3.1 Summary of Analysis

Surface water sampling results met PWQO, CEQG and ECA levels except for total iron, total aluminum, total suspended solids, and turbidity at some sites in the Pinewood River, the Rainy River, West Creek,

Loslo Creek, and Teeple Drain (Table 1). The sites were both upstream and downstream of the Project site and results are consistent with baseline results.

QA/QC procedures met expected controls (e.g., 20 % relative percent difference) except;

- Some field duplicate parameter pairs exceeded the RPD limit of 40%, although none of these parameter pairs exhibited concentrations greater than three times the detection limit. As a result, no implications to data quality are expected based on these exceedances.
- Method Blank exceeded ALS DQO for Total Aluminum. All associated sample results are at least 5 times greater than blank levels and are considered reliable.

4.0 Non-Routine Procedures

There were no non-routine calibration or maintenance procedures carried out on any major structure, equipment, apparatus, mechanism or thing forming a part of the sewage works during the reporting period.

5.0 Bypass or Upset Summary

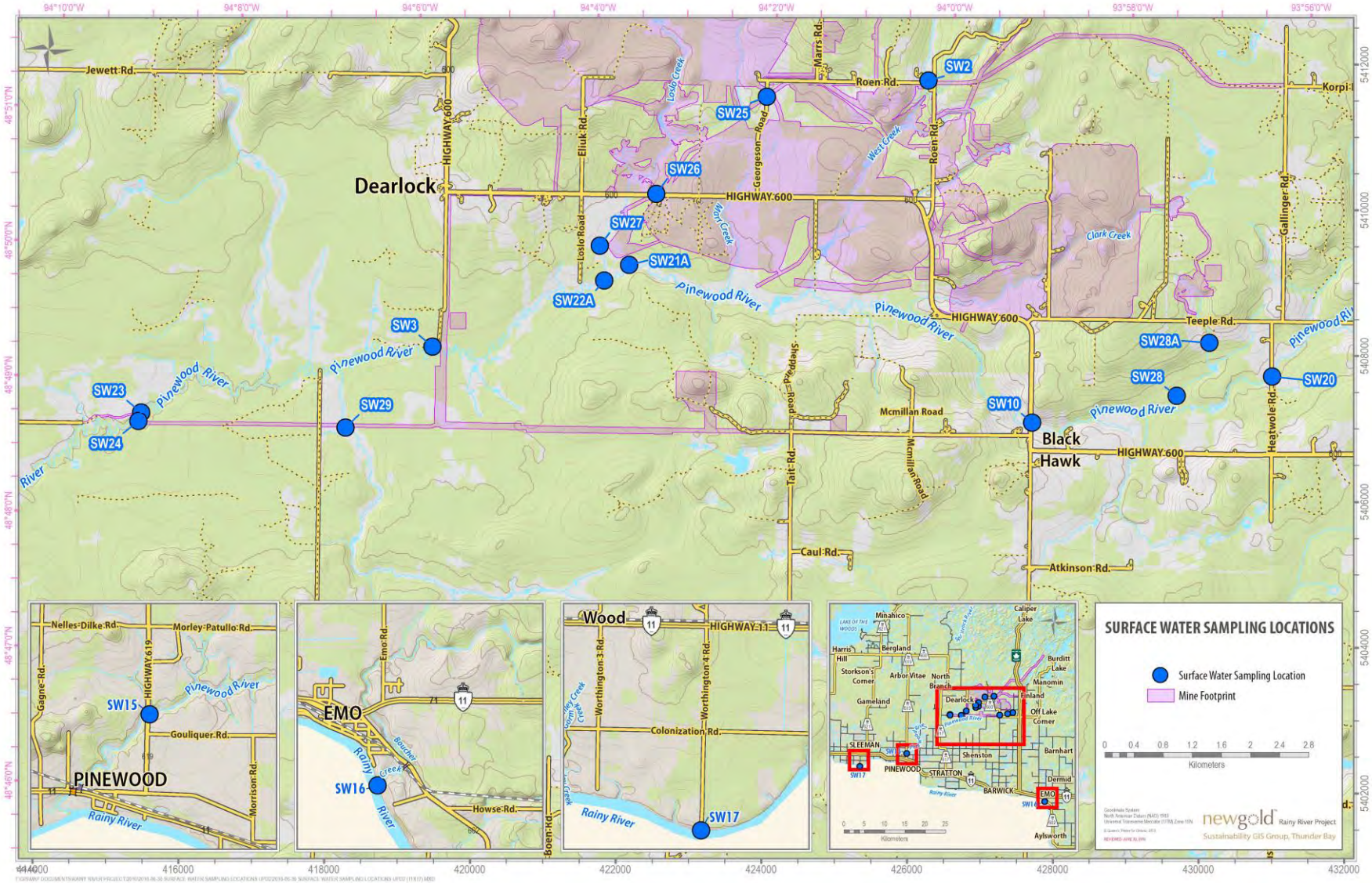
No bypass or upset conditions occurred during the reporting period.

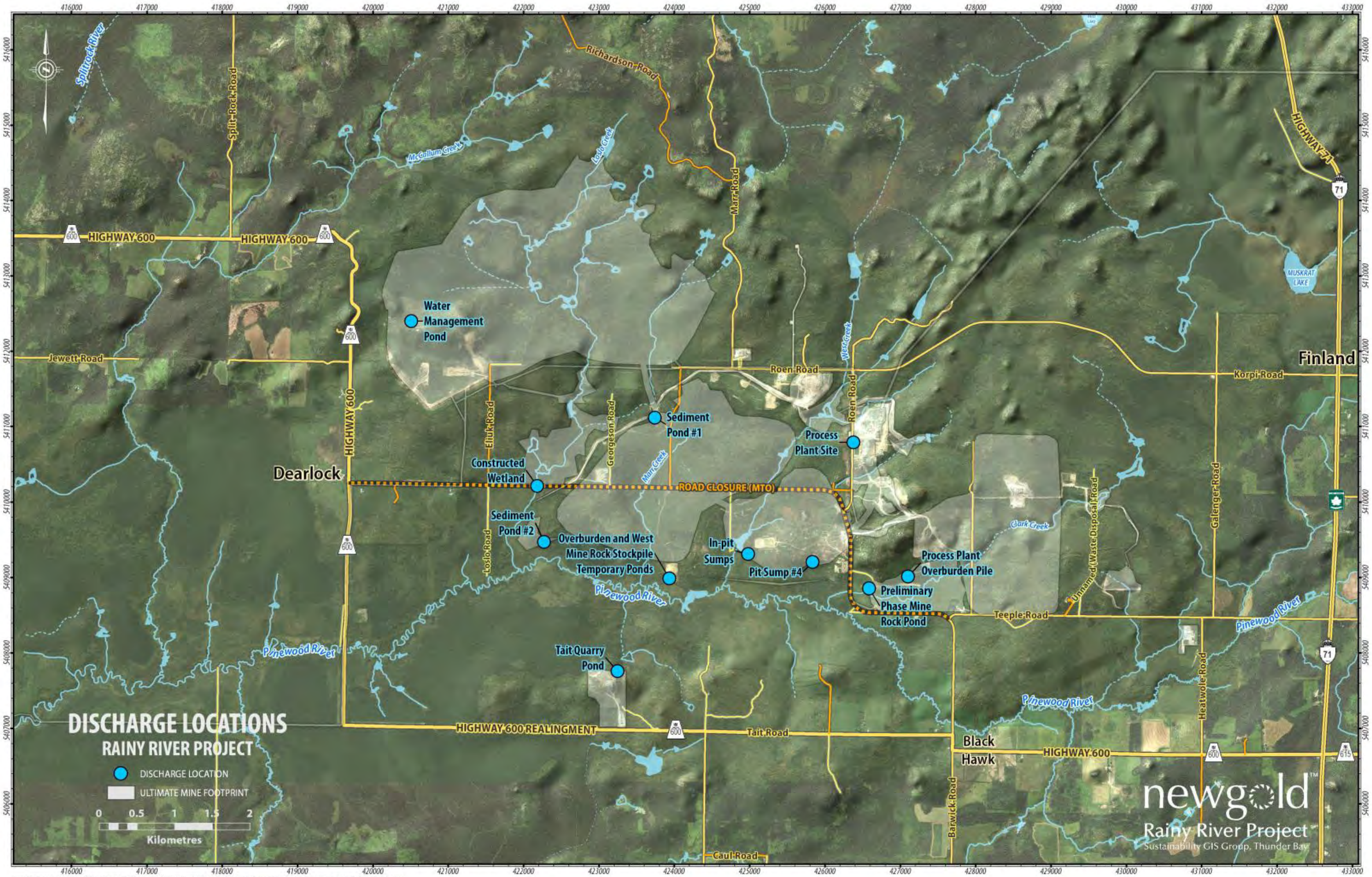
Table 1: Summary of Surface Water Sampling Results Where PWQO, CEQG, or ECA Were Exceeded

Site	Water Body	Parameter	Sample Concentration (mg/L)	PWQO (mg/L)	CEQG (mg/L)	ECA (mg/L)	MISA Qualifier	Historic Avg (mg/L)	Historic Max (mg/L)	Historic Min (mg/L)	Historic Median (mg/L)
SW28a	Teeple Drain	T-Al	0.33	0.075	0.1	-	-	-	-	-	-
SW28a	Teeple Drain	T-Fe	0.77	0.3	0.3	-	-	-	-	-	-
SW2	West Creek	T-Al	0.15	0.075	0.1	-	-	0.11	0.62	0.02	0.08
SW2	West Creek	T-Fe	0.36	0.3	0.3	-	-	0.56	2.07	0.11	0.40
SW27	Loslo Creek	T-Al	0.0805	0.075	0.1	-	-	-	-	-	-
SW27	Loslo Creek	T-Fe	0.33	0.3	0.3	-	-	-	-	-	-
SW3	Pinewood River	T-Al	0.191	0.075	0.1	-	-	0.36	2.77	0.0508	0.2625
SW3	Pinewood River	T-Fe	0.46	0.3	0.3	-	-	1.11	6.97	0.064	0.6885
SW10	Pinewood River	T-Al	0.355	0.075	0.1	-	-	0.8	32.3	0.292	0.1915
SW10	Pinewood River	T-Fe	0.68	0.3	0.3	-	-	1.70	42.3	0.287	0.623
SW15	Pinewood River	TSS	33.5	-	-	30	-	24.66	243.0	2.0	12.0
SW15	Pinewood River	Turbidity	41.4 NTU	0	0	-	-	21.3	127.0	1.81	15.5
SW15	Pinewood River	T-Al	1.07	0.075	0.1	-	-	0.68	4.95	0.05	0.46
SW15	Pinewood River	T-Fe	1.45	0.3	0.3	-	-	1.07	5.99	0.09	0.92
SW21a	Pinewood River	T-Al	0.125	0.075	0.1	-	-	-	-	-	-
SW21a	Pinewood River	T-Fe	0.41	0.3	0.3	-	-	-	-	-	-
SW22a	Pinewood River	T-Al	0.11	0.075	0.1	-	-	-	-	-	-
SW22a	Pinewood River	T-Fe	0.42	0.3	0.3	-	-	-	-	-	-
SW16	Rainy River	T-Al	0.224	0.075	0.1	-	-	0.31	2.65	0.04	0.17
SW16	Rainy River	T-Fe	0.36	0.3	0.3	-	-	0.44	3.28	0.06	0.25
SW17	Rainy River	T-Al	0.386	0.075	0.1	-	-	0.23	1.71	0.05	0.13
SW17	Rainy River	T-Fe	0.58	0.3	0.3	-	-	0.35	1.95	0.08	0.24

Table 2: Summary of Effluent Results for Construction Phase Works Discharge

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	June 30, 2016 Process Plant and Crusher Area Sediment Ponds (mg/L)	June 6, 2016 Process Plant Overburden Pile (Mine Rock Polishing Ponds)	June 27, 2016 In Pit Sump 3 (mg/L)	May 30, 2016 In Pit Sump 4 (mg/L)
Total Suspended Solids	30	15	32.5	13.0	13.5	4.5
Total Arsenic	0.034	0.017	0.0017	0.0012	0.0027	0.0027
Total Copper	0.028	0.014	0.0046	0.0021	0.0013	0.0014
Total Nickel	0.094	0.047	0.0025	0.0016	0.0009	0.0017
Total Lead	0.030	0.015	0.00036	0.00011	0.00019	0.00012
Total Zinc	0.348	0.174	0.0090	0.0030	0.0040	0.0010
Un-ionized Ammonia	0.2	0.1	0.069	0.001	0.013	0.211
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethat (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			8.91	8.82	8.52	8.56


Dearlock
Black Hawk
PINEWOOD
EMO
Wood
SW2
SW3
SW10
SW15
SW16
SW17
SW20
SW21A
SW22A
SW23
SW24
SW25
SW26
SW27
SW28
SW28A
SW29
Pinewood River
Rainy River
HIGHWAY 600
HIGHWAY 11
HIGHWAY 619
Roen Rd.
Jewett Rd.
Mcmillan Road
Caul Rd.
Atkinson Rd.
Teeple Rd.
Colonization Rd.
Howse Rd.
Gouliquer Rd.
SURFACE WATER SAMPLING LOCATIONS
Surface Water Sampling Location
Mine Footprint
Kilometers
newgold Rainy River Project
Sustainability GIS Group, Thunder Bay



Memorandum

To: Ray Boivin, Senior Environmental Officer, Kenora Area, MOECC

From: Darrell Martindale, Manager, Environment

Date: August 13, 2016

Re: **Monthly Surface Water Quality Results Summary – July 2016**

The following document has been provided consistent with Environmental Compliance Approval (ECA) # 5781-9VJQ2J, section 13(3) issued May 8, 2015. The purpose of the report is to provide a summary of monitoring activities related to the approved works.

Monitoring for June 2016 was applicable to the stage of project development;

- Construction on the Plant Site and Crusher Area Temporary Treatment Ponds was completed at the end of July, 2015;
- Construction on In-Pit Sump 3 was completed at the beginning of September, 2015;
- Construction on In-Pit Sump 4 was completed at the beginning of March, 2016 and commissioned in April, 2016;
- Construction on Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2 began in October, 2015;
- Construction on the Process Plant Overburden Pile (Mine Rock Pond Polishing Pond) was completed at the end of July 2015;
- Surface water sampling was conducted on July 14 and 15, 2016.
- Construction discharge sampling for the Plant Site and Crusher Area Treatment Ponds was conducted on July 5, 18, 20, and 21, 2016.
- Construction discharge sampling for the Process Plant Overburden Pile (Mine Rock Pond Polishing Pond) was conducted on July 5 and 25, 2016.
- Construction discharge sampling for In-Pit Sump 3 was conducted on July 15 and 27, 2016.
- Construction discharge sampling for In-Pit Sump 4 was conducted on July 20, 2016.

1.0 Plant Site and Crusher Area Sediment Ponds

The Plant Site and Crusher Area Sediment Ponds commenced construction on May 17, 2015. Prior to that time sediment and erosion control measures were put in place beginning on 5 May which included silt fencing and settling ponds. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. A single-polymer flocculant system was installed and commissioned on 15 July, 2015. This system was utilized in July, 2016 in the form of flocculant blocks.

1.1 In-Pit Sump 3

In-Pit Sump 3 commenced construction on August 20, 2015. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. Due to the exceedances that occurred in the month of July, systems have been put in place to assist with treatment for un-ionized ammonia and total suspended solids. These systems include proper drainage ditching around sump to prevent non-contact water from entering, a circulating flocculant system, topsoil and seed, and a three-tier splash pad at input. A sprinkler and dust suppression system will be implemented in the near future.

1.2 In-Pit Sump 4

In-Pit Sump 4 commenced construction beginning of January, 2016. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. Due to the exceedance that occurred in the month of July, systems have been put in place to assist with treatment for un-ionized ammonia and total suspended solids. These systems include a sprinkler and dust suppression framework and a circulating flocculant system.

1.3 Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2

Sumps 1 and 2 commenced construction in October, 2015 as part of the ditching system to catch runoff from the Overburden and West Mine Rock Stockpiles. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

1.4 Process Plant Overburden Pile (Mine Rock Sediment and Polishing Ponds)

Mine Rock Sediment and Polishing Ponds commenced construction at the beginning of 2015 as part of the ditching system to catch runoff from the Process Plant Overburden Stockpile. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

2.0 Effluent Sampling and Results

Sampling of the construction phase works occurred at discharge on July 5, 18, 20, and 21, 2016 from the Process Plant and Crusher Area Sediment Ponds, on July 15 and 27, 2016 from In Pit Sump 3, on July 20, 2016 from In Pit Sump 4, and on July 5 and 25, 2016 from the Mine Rock Sediment and Polishing Ponds. The sampling is to provide indication of performance of works relative to predicted performance and allow for water treatment to be tailored based on inputs.

In Pit Sump 4 discharge that occurred on July 20, 2016 had an Un-ionized Ammonia exceedance of 0.359 mg/L (SAC #4401-AC-J3CQ). In Pit Sump 3 discharge that occurred on July 27, 2016 had an Un-ionized Ammonia and Total Suspended Solids exceedance of 0.616 mg/L and 36.0 mg/L, respectively (SAC #5722-ACGJF8).

3.0 Surface Water Sampling

Surface water sampling was conducted on July 14 and 15, 2016. The following sites were not sampled for the given reasons;

- SW23, SW24, and SW29 do not require sampling as of yet as the triggering milestones have not yet been reached with construction.
- SW25 and SW26, although identified as requiring sampling within one month of the receipt of the ECA, are located along the planned route of the West Creek Diversion which has yet to be commissioned.

Sampling was conducted at the remaining sites following MISA protocols.

3.1 Summary of Analysis

Surface water sampling results met PWQO, CEQG and ECA levels except for total iron, total aluminum, and total suspended solids at some sites in the Pinewood River, the Rainy River, West Creek, Loslo Creek, and Teeple Drain (Table 1). The sites were both upstream and downstream of the Project site and results are consistent with baseline results.

QA/QC procedures met expected controls (e.g., 20 % relative percent difference) except;

- Some field duplicate parameter pairs exceeded the RPD limit of 40%, although none of these parameter pairs exhibited concentrations greater than three times the detection limit. As a result, no implications to data quality are expected based on these exceedances.

4.0 Non-Routine Procedures

There were no non-routine calibration or maintenance procedures carried out on any major structure, equipment, apparatus, mechanism or thing forming a part of the sewage works during the reporting period.

5.0 Bypass or Upset Summary

No bypass or upset conditions occurred during the reporting period.

Table 1: Summary of Surface Water Sampling Results Where PWQO, CEQG, or ECA Were Exceeded

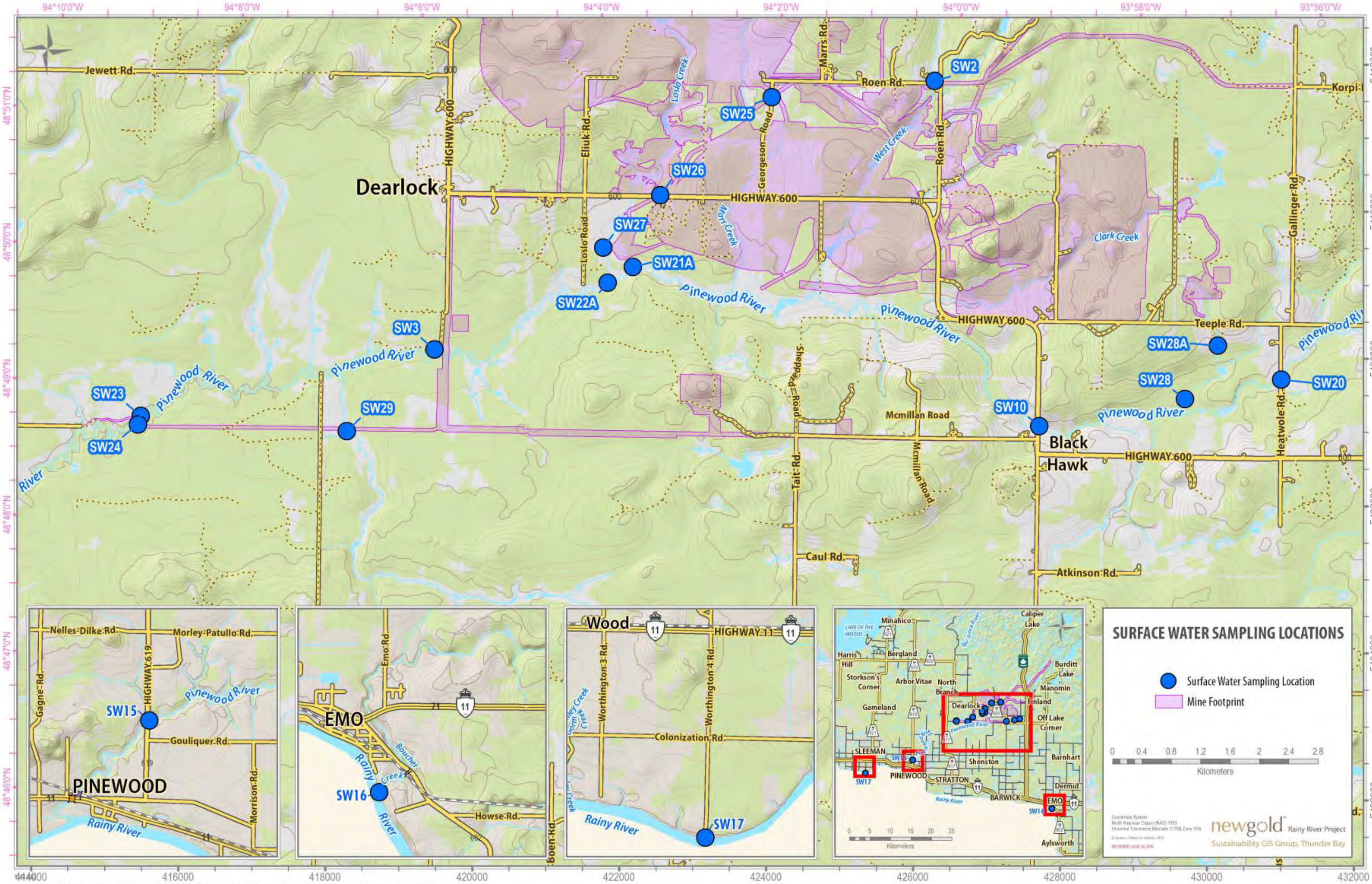
Site	Water Body	Parameter	Sample Concentration (mg/L)	PWQO (mg/L)	CEQG (mg/L)	ECA (mg/L)	MISA Qualifier	Historic Avg (mg/L)	Historic Max (mg/L)	Historic Min (mg/L)	Historic Median (mg/L)
SW28a	Teeple Drain	T-Al	0.154	0.075	0.1	-	-	-	-	-	-
SW28a	Teeple Drain	T-Fe	0.72	0.3	0.3	-	-	-	-	-	-
SW27	Loslo Creek	T-Fe	0.46	0.3	0.3	-	-	-	-	-	-
SW3	Pinewood River	T-Al	0.166	0.075	0.1	-	-	0.36	2.77	0.0508	0.2625
SW3	Pinewood River	T-Fe	0.69	0.3	0.3	-	-	1.11	6.97	0.064	0.6885
SW10	Pinewood River	T-Al	0.177	0.075	0.1	-	-	0.8	32.3	0.292	0.1915
SW10	Pinewood River	T-Fe	0.77	0.3	0.3	-	-	1.70	42.3	0.287	0.623
SW15	Pinewood River	T-Al	0.519	0.075	0.1	-	-	0.68	4.95	0.05	0.46
SW15	Pinewood River	T-Fe	1.00	0.3	0.3	-	-	1.07	5.99	0.09	0.92
SW20	Pinewood River	T-Al	0.164	0.075	0.1	-	-	-	-	-	-
SW20	Pinewood River	T-Fe	0.71	0.3	0.3	-	-	-	-	-	-
SW21a	Pinewood River	TSS	43.0	-	-	30 (Max)	-	-	-	-	-
SW21a	Pinewood River	T-Al	0.0805	0.075	0.1	-	-	-	-	-	-
SW21a	Pinewood River	T-Fe	0.59	0.3	0.3	-	-	-	-	-	-
SW22a	Pinewood River	T-Fe	0.54	0.3	0.3	-	-	-	-	-	-
SW16	Rainy River	T-Al	0.18	0.075	0.1	-	-	0.31	2.65	0.04	0.17
SW16	Rainy River	T-Fe	0.33	0.3	0.3	-	-	0.44	3.28	0.06	0.25
SW17	Rainy River	T-Al	0.149	0.075	0.1	-	-	0.23	1.71	0.05	0.13

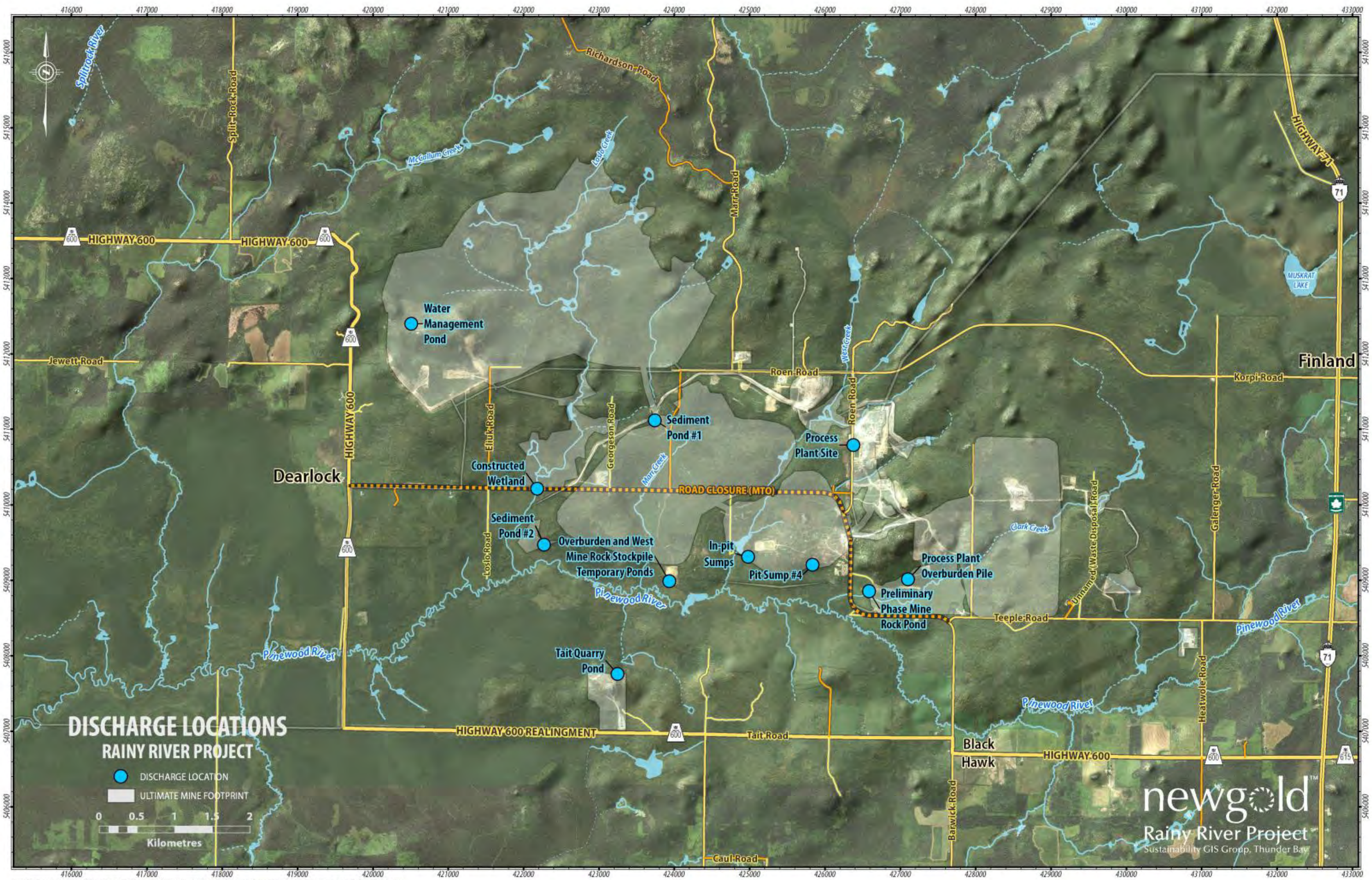
Table 2: Summary of Effluent Results for Construction Phase Works Discharge

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	July 5, 2016 Process Plant and Crusher Area Sediment Ponds (mg/L)	July 18, 2016 Process Plant and Crusher Area Sediment Ponds (mg/L)	July 18, 2016 Process Plant and Crusher Area Sediment Ponds (mg/L)	July 20, 2016 Process Plant and Crusher Area Sediment Ponds (mg/L)
Total Suspended Solids	30	15	4.5	16.0	12.0	12.5
Total Arsenic	0.034	0.017	0.0014	0.0014	0.0014	0.0011
Total Copper	0.028	0.014	0.0019	0.0046	0.0046	0.0013
Total Nickel	0.094	0.047	0.0011	0.0022	0.0022	0.0007
Total Lead	0.030	0.015	0.00003	0.00030	0.00030	0.00049
Total Zinc	0.348	0.174	0.0016	0.0060	0.0060	0.0015
Un-ionized Ammonia	0.2	0.1	0.004	0.001	0.013	0.001
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethat (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.81	7.15	7.57	8.32

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	July 21, 2016 Process Plant and Crusher Area Sediment Ponds (mg/L)	July 5, 2016 Process Plant Overburden Pile (Mine Rock Polishing Ponds)	July 25, 2016 Process Plant Overburden Pile (Mine Rock Polishing Ponds)	July 15, 2016 In Pit Sump 3 (mg/L)
Total Suspended Solids	30	15	8.5	4.0	6.5	7.0
Total Arsenic	0.034	0.017	0.0013	0.0013	0.0016	0.0028
Total Copper	0.028	0.014	0.0122	0.0029	0.0022	0.0011
Total Nickel	0.094	0.047	0.0023	0.0013	0.0013	0.0014
Total Lead	0.030	0.015	0.00040	0.00007	0.00008	0.00013
Total Zinc	0.348	0.174	0.0145	0.0030	0.0015	0.0025
Un-ionized Ammonia	0.2	0.1	0.004	0.004	0.001	0.018
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethat (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			8.59	8.06	8.65	8.39

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	July 20, 2016 In Pit Sump 4 (mg/L)	July 27, 2016 In Pit Sump 3 (mg/L)
Total Suspended Solids	30	15	4.5	36.0
Total Arsenic	0.034	0.017	0.0031	0.0030
Total Copper	0.028	0.014	0.0028	0.0028
Total Nickel	0.094	0.047	0.0025	0.0041
Total Lead	0.030	0.015	0.00005	0.00032
Total Zinc	0.348	0.174	0.0020	0.0040
Un-ionized Ammonia	0.2	0.1	0.359	0.616
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethat (not greater than 50% mortality in undiluted effluent)		Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			8.69	8.08


SURFACE WATER SAMPLING LOCATIONS
Surface Water Sampling Location
Mine Footprint
Kilometers
Dearlock
Black Hawk
EMO
PINEWOOD
Wood
Pinewood River
Rainy River
HIGHWAY 600
Jewett Rd.
Roen Rd.
Teeple Rd.
Mcmillan Road
Caul Rd.
Atkinson Rd.
Colonization Rd.
SW2
SW3
SW10
SW15
SW16
SW17
SW20
SW21A
SW22A
SW23
SW24
SW25
SW26
SW27
SW28
SW28A
SW29
newgold Rainy River Project
Sustainability GIS Group, Thunder Bay


DISCHARGE LOCATIONS
RAINY RIVER PROJECT
DISCHARGE LOCATION
ULTIMATE MINE FOOTPRINT
Kilometres
Water Management Pond
Sediment Pond #1
Process Plant Site
Constructed Wetland
Sediment Pond #2
Overburden and West Mine Rock Stockpile Temporary Ponds
In-pit Sumps
Pit Sump #4
Process Plant Overburden Pile
Preliminary Phase Mine Rock Pond
Tait Quarry Pond
ROAD CLOSURE (MTO)
Dearlock
Finland
Black Hawk
HIGHWAY 600
HIGHWAY 600 REALIGNMENT
HIGHWAY 71
Roen Road
Korpi Road
Teeple Road
Tait Road
Caul Road
Jewett Road
Richardson Road
Pinewood River
MUSKRAT LAKE
newgold Rainy River Project
Sustainability GIS Group, Thunder Bay

Memorandum

To: Ray Boivin, Senior Environmental Officer, Kenora Area, MOECC

From: Darrell Martindale, Manager, Environment

Date: October 4, 2016

Re: **Monthly Surface Water Quality Results Summary – August 2016**

The following document has been provided consistent with Environmental Compliance Approval (ECA) # 5781-9VJQ2J, section 13(3) issued May 8, 2015. The purpose of the report is to provide a summary of monitoring activities related to the approved works.

Monitoring for June 2016 was applicable to the stage of project development;

- Construction on the Plant Site and Crusher Area Temporary Treatment Ponds was completed at the end of July, 2015;
- Construction on In-Pit Sump 3 was completed at the beginning of September, 2015;
- Construction on In-Pit Sump 4 was completed at the beginning of March, 2016 and commissioned in April, 2016;
- Construction on Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2 began in October, 2015;
- Construction on the Process Plant Overburden Pile (Mine Rock Pond Polishing Pond) was completed at the end of July 2015;
- Surface water sampling was conducted on August 16, 2016.
- Construction discharge sampling for the Plant Site and Crusher Area Treatment Ponds was conducted on August 22 and 23, 2016.
- Construction discharge sampling for the Process Plant Overburden Pile (Mine Rock Pond Polishing Pond) was conducted on August 24, 2016.
- Construction discharge sampling for In-Pit Sump 3 was conducted on August 28 and 29, 2016.
- Construction discharge sampling for In-Pit Sump 4 was conducted on August 14 and 24, 2016.

1.0 Plant Site and Crusher Area Sediment Ponds

The Plant Site and Crusher Area Sediment Ponds commenced construction on May 17, 2015. Prior to that time sediment and erosion control measures were put in place beginning on 5 May which included silt fencing and settling ponds. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. A single-polymer flocculant system was installed and commissioned on 15 July, 2015. This system was utilized in July, 2016 in the form of flocculant blocks.

1.1 In-Pit Sump 3

In-Pit Sump 3 commenced construction on August 20, 2015. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. Due to the exceedances that occurred in the month of July, systems have been put in place to assist with treatment for un-ionized ammonia and total suspended solids. These systems include proper drainage ditching around sump to prevent non-contact water from entering, flocculant blocks at input, topsoil and seed, and a three-tier splash pad at input. Additional sampling measures have also been implemented which consist of sampling all four corners before discharge and taking three different samples over time at discharge.

1.2 In-Pit Sump 4

In-Pit Sump 4 commenced construction beginning of January, 2016. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. Due to the exceedance that occurred in the month of July, systems have been put in place to assist with treatment for un-ionized ammonia and total suspended solids. These systems include a sprinkler and dust suppression framework and a circulating flocculant system. Additional sampling measures have also been implemented which consist of sampling all four corners before discharge and taking three different samples over time at discharge.

1.3 Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2

Sumps 1 and 2 commenced construction in October, 2015 as part of the ditching system to catch runoff from the Overburden and West Mine Rock Stockpiles. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

Per approval letter received August 25, 2016 from the Ministry of Environment and Climate Change, these sumps are now being used to store excess water from the In Pit Sumps. This allows for additional capacity and retention time to protect the Pinewood River from the potential adverse effects posed by high un-ionized ammonia levels.

1.4 Process Plant Overburden Pile (Mine Rock Sediment and Polishing Ponds)

Mine Rock Sediment and Polishing Ponds commenced construction at the beginning of 2015 as part of the ditching system to catch runoff from the Process Plant Overburden Stockpile. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

2.0 Effluent Sampling and Results

Sampling of the construction phase works occurred at discharge on August 22 and 23, 2016 from the Process Plant and Crusher Area Sediment Ponds, on August 28 and 29, 2016 from In Pit Sump 3, on August 14 and 24, 2016 from In Pit Sump 4, and on August 24, 2016 from the Mine Rock Sediment and Polishing Ponds. The sampling is to provide indication of performance of works relative to predicted performance and allow for water treatment to be tailored based on inputs.

3.0 Surface Water Sampling

Surface water sampling was conducted on August 16, 2016. The following sites were not sampled for the given reasons;

- SW23, SW24, and SW29 do not require sampling as of yet as the triggering milestones have not yet been reached with construction.
- SW25 and SW26, although identified as requiring sampling within one month of the receipt of the ECA, are located along the planned route of the West Creek Diversion which has yet to be commissioned.
- SW28A had insufficient sample volume.

Sampling was conducted at the remaining sites following MISA protocols.

3.1 Summary of Analysis

Surface water sampling results met PWQO, CEQG and ECA levels except for total iron and total aluminum at some sites in the Pinewood River, the Rainy River, West Creek and Loslo Creek, and (Table 1). The sites were both upstream and downstream of the Project site and results are consistent with baseline results.

QA/QC procedures met expected controls (e.g., 20 % relative percent difference) except;

- Some field duplicate parameter pairs exceeded the RPD limit of 40%, although none of these parameter pairs exhibited concentrations greater than three times the detection limit. As a result, no implications to data quality are expected based on these exceedances.

4.0 Non-Routine Procedures

There were no non-routine calibration or maintenance procedures carried out on any major structure, equipment, apparatus, mechanism or thing forming a part of the sewage works during the reporting period.

5.0 Bypass or Upset Summary

No bypass or upset conditions occurred during the reporting period.

Table 1: Summary of Surface Water Sampling Results Where PWQO, CEQG, or ECA Were Exceeded

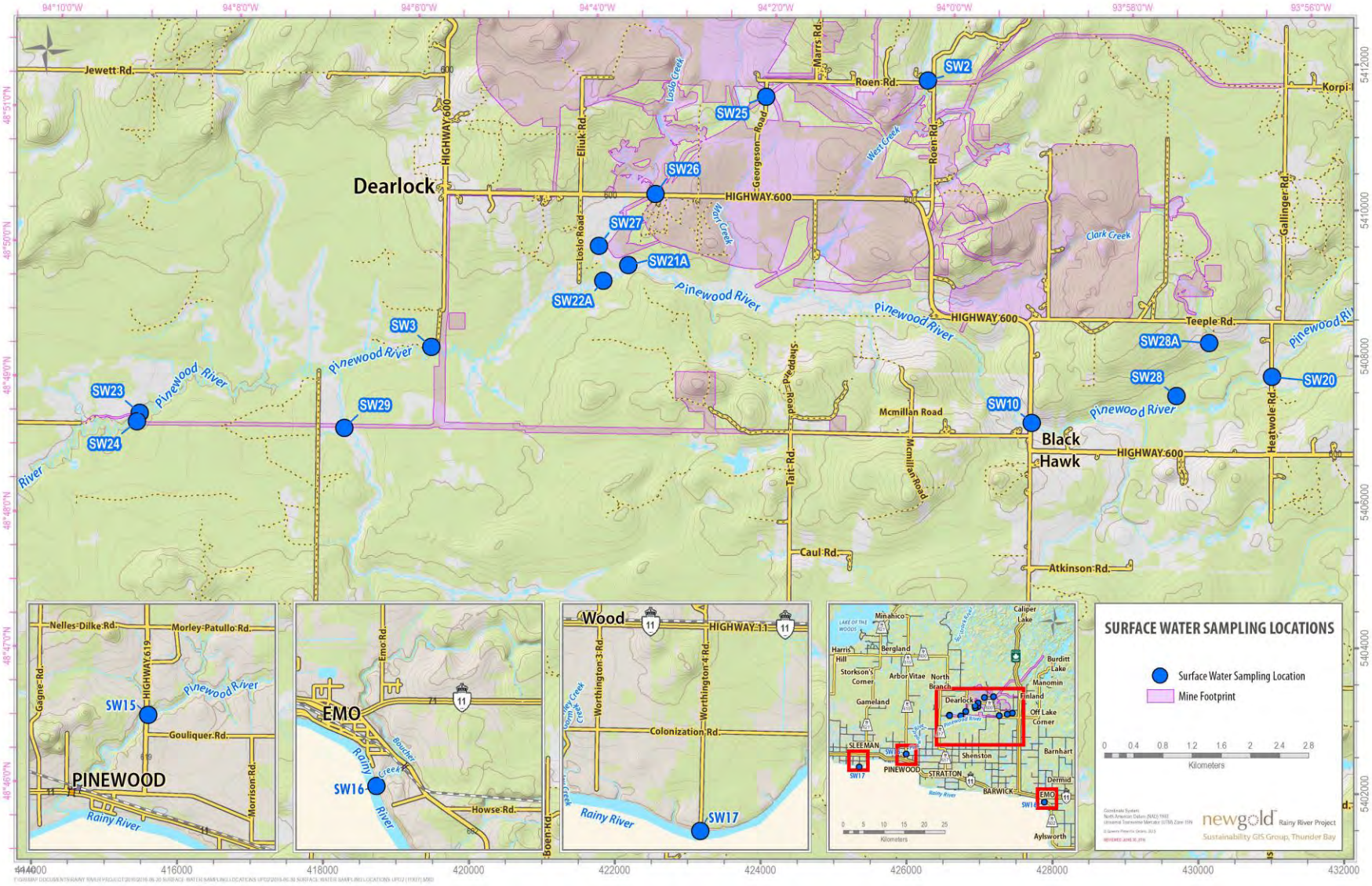
Site	Water Body	Parameter	Sample Concentration (mg/L)	PWQO (mg/L)	CEQG (mg/L)	ECA (mg/L)	MISA Qualifier	Historic Avg (mg/L)	Historic Max (mg/L)	Historic Min (mg/L)	Historic Median (mg/L)
SW27	Loslo Creek	T-Al	0.158	0.075	0.1	-	-	-	-	-	-
SW27	Loslo Creek	T-Fe	0.61	0.3	0.3	-	-	-	-	-	-
SW2	West Creek	T-Fe	0.38	0.3	0.3	-	-	0.56	2.07	0.11	0.40
SW3	Pinewood River	T-Al	0.584	0.075	0.1	-	-	0.36	2.77	0.0508	0.2625
SW3	Pinewood River	T-Fe	0.99	0.3	0.3	-	-	1.11	6.97	0.064	0.6885
SW10	Pinewood River	T-Al	0.091	0.075	0.1	-	-	0.8	32.3	0.292	0.1915
SW10	Pinewood River	T-Fe	0.5	0.3	0.3	-	-	1.70	42.3	0.287	0.623
SW15	Pinewood River	T-Al	0.766	0.075	0.1	-	-	0.68	4.95	0.05	0.46
SW15	Pinewood River	T-Fe	1.32	0.3	0.3	-	-	1.07	5.99	0.09	0.92
SW20	Pinewood River	T-Fe	0.72	0.3	0.3	-	-	-	-	-	-
SW21a	Pinewood River	T-Fe	0.38	0.3	0.3	-	-	-	-	-	-
SW22a	Pinewood River	T-Fe	0.37	0.3	0.3	-	-	-	-	-	-
SW16	Rainy River	T-Al	0.286	0.075	0.1	-	-	0.31	2.65	0.04	0.17
SW16	Rainy River	T-Fe	0.44	0.3	0.3	-	-	0.44	3.28	0.06	0.25
SW17	Rainy River	T-Al	0.16	0.075	0.1	-	-	0.23	1.71	0.05	0.13
SW17	Rainy River	T-Fe	0.36	0.3	0.3	-	-	0.35	1.95	0.08	0.24

Table 2: Summary of Effluent Results for Construction Phase Works Discharge

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	August 22, 2016 Process Plant and Crusher Area Sediment Ponds (mg/L)	August 23, 2016 Process Plant and Crusher Area Sediment Ponds (mg/L)	August 24, 2016 Process Plant Overburden Pile (Mine Rock Polishing Ponds) (mg/L)	August 14, 2016 In Pit Sump 4 (mg/L)
Total Suspended Solids	30	15	10.0	12.0	6.5	5.0
Total Arsenic	0.034	0.017	0.0013	0.0014	0.0020	0.0027
Total Copper	0.028	0.014	0.0020	0.0025	0.0019	0.0014
Total Nickel	0.094	0.047	0.0015	0.0005	0.0005	0.0028
Total Lead	0.030	0.015	0.00009	0.00010	0.00006	0.00010
Total Zinc	0.348	0.174	0.0020	0.0045	0.0015	0.0075
Un-ionized Ammonia	0.2	0.1	0.001	0.001	0.001	0.027
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethat (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			8.22	7.98	7.57	6.91

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	August 14, 2016 In Pit Sump 4 (mg/L)	August 14, 2016 In Pit Sump 4 (mg/L)	August 24, 2016 In Pit Sump 4 (mg/L)	August 24, 2016 In Pit Sump 4 (mg/L)
Total Suspended Solids	30	15	5.5	11.0	6.5	11.0
Total Arsenic	0.034	0.017	0.0026	0.0027	0.0028	0.0029
Total Copper	0.028	0.014	0.0013	0.0016	0.0015	0.0023
Total Nickel	0.094	0.047	0.0027	0.0027	0.0032	0.0034
Total Lead	0.030	0.015	0.00009	0.00012	0.00014	0.00020
Total Zinc	0.348	0.174	0.0070	0.0070	0.0100	0.0110
Un-ionized Ammonia	0.2	0.1	0.028	0.020	0.128	0.091
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethat (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			6.93	6.79	7.73	7.58

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	August 24, 2016 In Pit Sump 4 (mg/L)	August 28, 2016 In Pit Sump 3 (mg/L)	August 28, 2016 In Pit Sump 3 (mg/L)	August 29, 2016 In Pit Sump 3 (mg/L)
Total Suspended Solids	30	15	3.5	4.5	5.0	24.5
Total Arsenic	0.034	0.017	0.0027	0.0016	0.0016	0.0016
Total Copper	0.028	0.014	0.0012	0.0008	0.0008	0.001
Total Nickel	0.094	0.047	0.0032	0.0015	0.0014	0.0015
Total Lead	0.030	0.015	0.00012	0.00012	0.00012	0.00018
Total Zinc	0.348	0.174	0.0305	0.006	0.005	0.0045
Un-ionized Ammonia	0.2	0.1	0.087	0.034	0.067	0.102
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethat (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.56	7.18	7.47	7.67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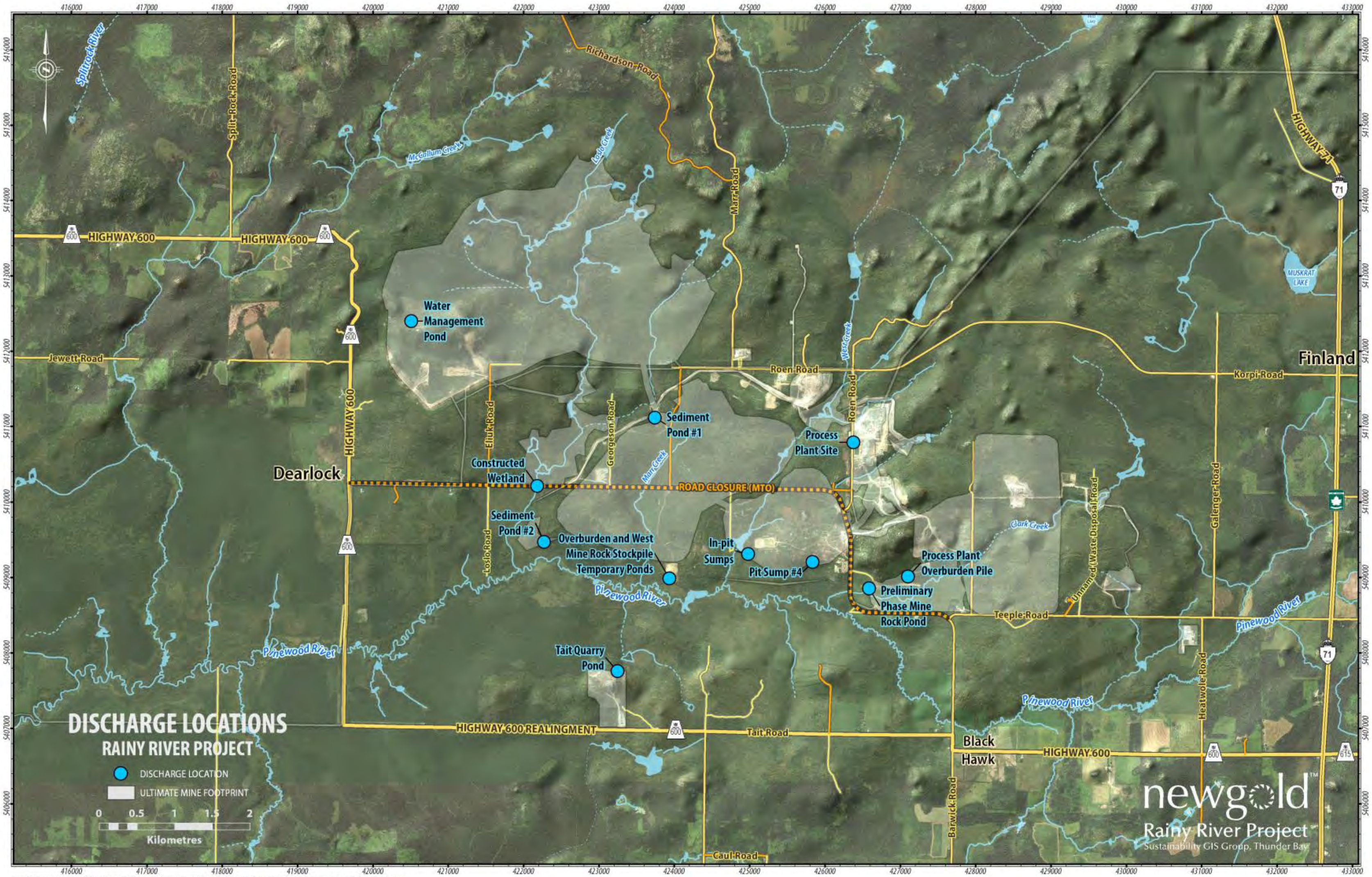
Dearlock
HIGHWAY 600
Roen Rd.
Korpi
Loslo Road
Eliuk Rd.
Georgeson Road
Marrs Rd.
West Creek
Clark Creek
Gallinger Rd.
Teeple Rd.
Pinewood River
SW2
SW25
SW26
SW27
SW21A
SW22A
SW3
SW23
SW24
SW29
SW28A
SW28
SW20
SW10
Black Hawk
Heatwole Rd.
Mcmillan Road
Tait Rd.
Caul Rd.
Atkinson Rd.
Sheppard Road
Nelles Dilke Rd.
Morley Patullo Rd.
HIGHWAY 619
Gagne Rd.
Gouliquer Rd.
Morrison Rd.
PINEWOOD
Rainy River
SW15
EMO
Emo Rd.
Howse Rd.
SW16
Wood
HIGHWAY 11
Worthington 3 Rd.
Worthington 4 Rd.
Colonization Rd.
SW17
SURFACE WATER SAMPLING LOCATIONS
Surface Water Sampling Location
Mine Footprint
Kilometers
newgold Rainy River Project
Sustainability GIS Group, Thunder Bay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Kilometres
Water Management Pond
Sediment Pond #1
Process Plant Site
Constructed Wetland
ROAD CLOSURE (MTO)
Sediment Pond #2
Overburden and West Mine Rock Stockpile Temporary Ponds
In-pit Sumps
Pit Sump #4
Process Plant Overburden Pile
Preliminary Phase Mine Rock Pond
Tait Quarry Pond
Dearlock
Finland
Black Hawk
HIGHWAY 600
HIGHWAY 600 REALIGNMENT
HIGHWAY 71
Jewett Road
Roen Road
Korpi Road
Teeple Road
Tait Road
Caul Road
Richardson Road
Marr Road
Elui Road
Georgeson Road
Galenger Road
Heatwole Road
Barwick Road
Pinewood River
McCallum Creek
Clark Creek
Spiltrock River
MUSKRAT LAKE
newgold
Rainy River Project
Sustainability GIS Group, Thunder Bay

Memorandum

To: Ray Boivin, Senior Environmental Officer, Kenora Area, MOECC

From: Darrell Martindale, Manager, Environment

Date: November 7, 2016

Re: **Monthly Surface Water Quality Results Summary – September 2016**

The following document has been provided consistent with Environmental Compliance Approval (ECA) # 5781-9VJQ2J, section 13(3) issued May 8, 2015. The purpose of the report is to provide a summary of monitoring activities related to the approved works.

Monitoring for September 2016 was applicable to the stage of project development;

- Construction on the Plant Site and Crusher Area Temporary Treatment Ponds was completed at the end of July, 2015;
- Construction on In-Pit Sump 3 was completed at the beginning of September, 2015;
- Construction on In-Pit Sump 4 was completed at the beginning of March, 2016 and commissioned in April, 2016;
- Construction on Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2 began in October, 2015;
- Construction on the Process Plant Overburden Pile (Mine Rock Pond Polishing Pond) was completed at the end of July 2015;
- Construction on the WMP Excavated Pond (Borrow) was completed August 2016;
- Surface water sampling was conducted on September 21, 2016.
- Construction discharge sampling for the Plant Site and Crusher Area Treatment Ponds was conducted on September 17 and 18, 2016.
- Construction discharge sampling for the WMP Excavated Pond (Borrow) was conducted on September 12, 2016.
- Construction discharge sampling for the Overburden and West Mine Rock Stockpile Temporary Sump 1 was conducted on September 22, 2016.
- Construction discharge sampling for the Overburden and West Mine Rock Stockpile Temporary Sump 2 was conducted on September 4, 5, 16, 17, and 18, 2016.
- Construction discharge sampling for In-Pit Sump 3 was conducted on September 9, 10, 16, 17, 18, and 30, 2016.
- Construction discharge sampling for In-Pit Sump 4 was conducted on September 5, 6, 22, and 23, 2016.

1.0 Plant Site and Crusher Area Sediment Ponds

The Plant Site and Crusher Area Sediment Ponds commenced construction on May 17, 2015. Prior to that time sediment and erosion control measures were put in place beginning on 5 May which included

silt fencing and settling ponds. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. A single-polymer flocculant system was installed and commissioned on 15 July, 2015. This system was utilized in September, 2016 in the form of flocculant blocks.

1.1 In-Pit Sump 3

In-Pit Sump 3 commenced construction on August 20, 2015. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. Due to the exceedances that occurred in the month of July, systems have been put in place to assist with treatment for un-ionized ammonia and total suspended solids. These systems include proper drainage ditching around sump to prevent non-contact water from entering, flocculant blocks at input, topsoil and seed, and a three-tier splash pad at input. Additional sampling measures have also been implemented which consist of sampling all four corners before discharge and taking three different samples over time at discharge.

1.2 In-Pit Sump 4

In-Pit Sump 4 commenced construction beginning of January, 2016. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. Due to the exceedance that occurred in the month of July, systems have been put in place to assist with treatment for un-ionized ammonia and total suspended solids. These systems include a sprinkler and dust suppression framework and a circulating flocculant system. Additional sampling measures have also been implemented which consist of sampling all four corners before discharge and taking three different samples over time at discharge.

1.3 Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2

Sumps 1 and 2 commenced construction in October, 2015 as part of the ditching system to catch runoff from the Overburden and West Mine Rock Stockpiles. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

Per approval letter received August 25, 2016 from the Ministry of Environment and Climate Change, these sumps are now being used to store excess water from the In Pit Sumps. This allows for additional capacity and retention time to protect the Pinewood River from the potential adverse effects posed by high un-ionized ammonia levels.

1.4 Process Plant Overburden Pile (Mine Rock Sediment and Polishing Ponds)

Mine Rock Sediment and Polishing Ponds commenced construction at the beginning of 2015 as part of the ditching system to catch runoff from the Process Plant Overburden Stockpile. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

1.5 WMP Excavated Pond (Borrow)

WMP Excavated Pond (Borrow) commenced construction in 2015. The pond was reworked in August 2016 to allow all water from inside the Water Management Pond dams to drain to this collection system.

2.0 Effluent Sampling and Results

Sampling of the construction phase works occurred at discharge on September 17 and 18, 2016 from the Process Plant and Crusher Area Sediment Ponds, on September 9, 10, 16, 17, 18, and 30, 2016 from In Pit Sump 3, on September 5, 6, 22, and 23, 2016 from In Pit Sump 4, on September 22, 2016 from West Mine Rock Stockpile and OVB Sump 1, on September 4, 5, 16, 17, and 18, 2016 from West Mine Rock and OVB Sump 2, and September 12, 2016 from WMP Excavated Pond (Borrow). The sampling is to provide indication of performance of works relative to predicted performance and allow for water treatment to be tailored based on inputs.

3.0 Surface Water Sampling

Surface water sampling was conducted on September 21, 2016. The following sites were not sampled for the given reasons;

- SW23, SW24, and SW29 do not require sampling as of yet as the triggering milestones have not yet been reached with construction.
- SW25 and SW26, although identified as requiring sampling within one month of the receipt of the ECA, are located along the planned route of the West Creek Diversion which has yet to be commissioned.

Sampling was conducted at the remaining sites following MISA protocols.

3.1 Summary of Analysis

Surface water sampling results met PWQO, CEQG and ECA levels except for total iron, total aluminum and fluoride at some sites in the Pinewood River, the Rainy River, Loslo Creek, and Teeple Drain (Table 1). The sites were both upstream and downstream of the Project site and results are consistent with baseline results.

QA/QC procedures met expected controls (e.g., 20 % relative percent difference) except;

- Some field duplicate parameter pairs exceeded the RPD limit of 40%, although none of these parameter pairs exhibited concentrations greater than three times the detection limit. As a result, no implications to data quality are expected based on these exceedances.

4.0 Non-Routine Procedures

There were no non-routine calibration or maintenance procedures carried out on any major structure, equipment, apparatus, mechanism or thing forming a part of the sewage works during the reporting period.

5.0 Bypass or Upset Summary

No bypass or upset conditions occurred during the reporting period.

Table 1: Summary of Surface Water Sampling Results Where PWQO, CEQG, or ECA Were Exceeded

Site	Water Body	Parameter	Sample Concentration (mg/L)	PWQO (mg/L)	CEQG (mg/L)	ECA (mg/L)	MISA Qualifier	Historic Avg (mg/L)	Historic Max (mg/L)	Historic Min (mg/L)	Historic Median (mg/L)
SW27	Loslo Creek	T-Al	0.0845	0.075	0.1	-	-	-	-	-	-
SW27	Loslo Creek	T-Fe	0.33	0.3	0.3	-	-	-	-	-	-
SW28A	Teeple Drain	Fluoride	0.145	-	0.12	-	-	-	-	-	-
SW3	Pinewood River	T-Al	0.342	0.075	0.1	-	-	0.36	2.77	0.0508	0.2625
SW3	Pinewood River	T-Fe	0.64	0.3	0.3	-	-	1.11	6.97	0.064	0.6885
SW10	Pinewood River	T-Al	0.47	0.075	0.1	-	-	0.8	32.3	0.292	0.1915
SW15	Pinewood River	T-Al	0.882	0.075	0.1	-	-	0.68	4.95	0.05	0.46
SW15	Pinewood River	T-Fe	1.21	0.3	0.3	-	-	1.07	5.99	0.09	0.92
SW20	Pinewood River	T-Al	0.132	0.075	0.1	-	-	-	-	-	-
SW20	Pinewood River	T-Fe	0.61	0.3	0.3	-	-	-	-	-	-
SW21a	Pinewood River	Nitrite	0.222	-	0.06	-	-	-	-	-	-
SW22a	Pinewood River	T-Al	0.086	0.075	0.1	-	-	-	-	-	-
SW16	Rainy River	T-Al	0.193	0.075	0.1	-	-	0.31	2.65	0.04	0.17
SW16	Rainy River	T-Fe	0.31	0.3	0.3	-	-	0.44	3.28	0.06	0.25
SW17	Rainy River	T-Al	0.15	0.075	0.1	-	-	0.23	1.71	0.05	0.13
SW17	Rainy River	T-Fe	0.42	0.3	0.3	-	-	0.35	1.95	0.08	0.24

Table 2: Summary of Effluent Results for Construction Phase Works Discharge

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	September 4, 2016 West Mine Rock Stockpile Sump 2 (mg/L)	September 4, 2016 West Mine Rock Stockpile Sump 2 (mg/L)	September 5, 2016 West Mine Rock Stockpile Sump 2 (mg/L)	September 5, 2016 In Pit Sump 4 (mg/L)
Total Suspended Solids	30	15	1.5	0.5	17	2.0
Total Arsenic	0.034	0.017	0.0018	0.0018	0.0018	0.0024
Total Copper	0.028	0.014	0.0012	0.0013	0.0015	0.0014
Total Nickel	0.094	0.047	0.0013	0.0015	0.0016	0.0028
Total Lead	0.030	0.015	0.00006	0.00009	0.0002	0.00011
Total Zinc	0.348	0.174	0.006	0.002	0.0055	0.003
Un-ionized Ammonia	0.2	0.1	0.026	0.026	0.026	0.07
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.36	7.35	7.39	7.58

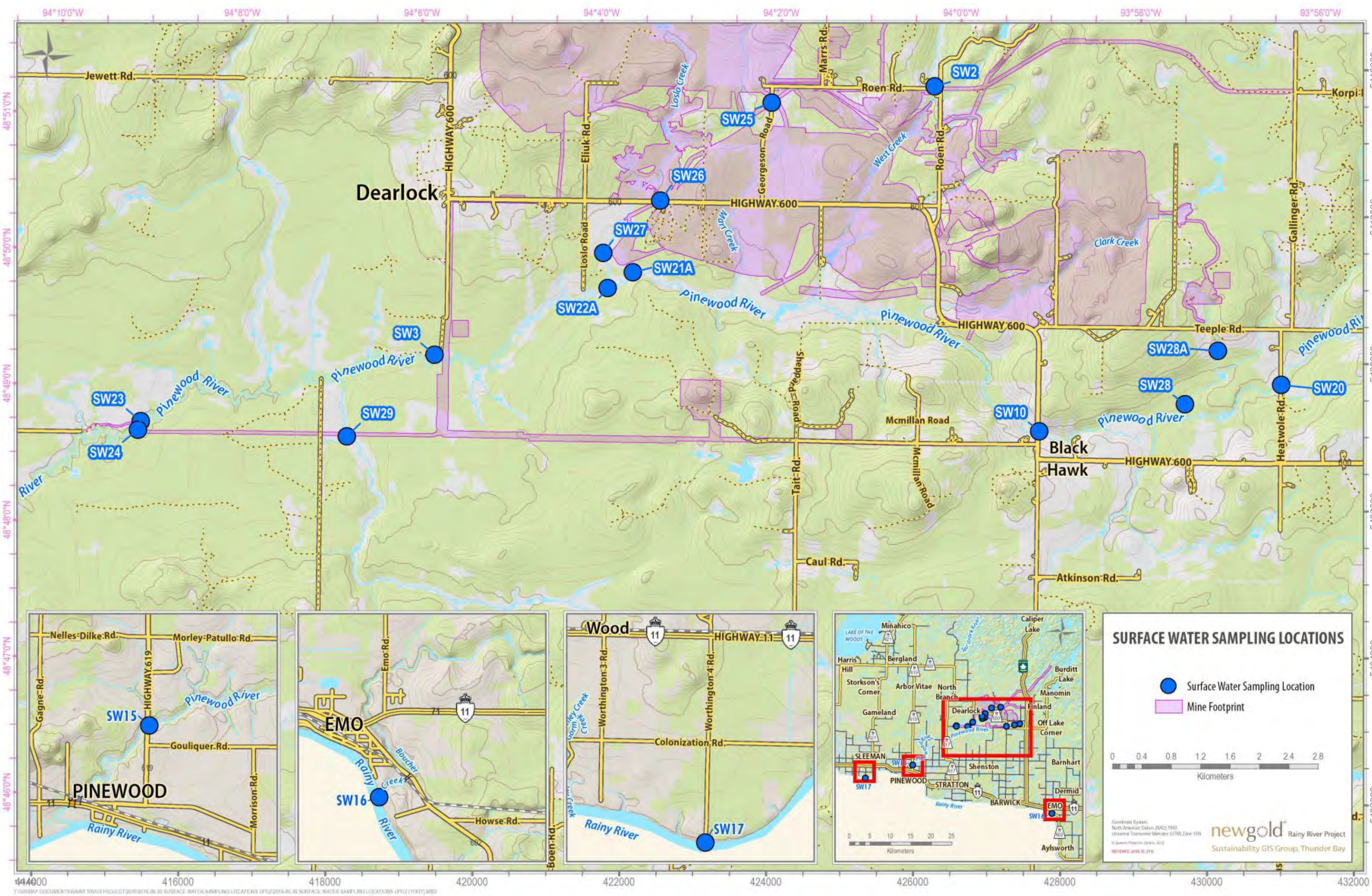
Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	September 5, 2016 In Pit Sump 4 (mg/L)	September 6, 2016 In Pit Sump 4 (mg/L)	September 9, 2016 In Pit Sump 3 (mg/L)	September 9, 2016 In Pit Sump 3 (mg/L)
Total Suspended Solids	30	15	4.0	4.5	9.5	4.5
Total Arsenic	0.034	0.017	0.0024	0.0024	0.0026	0.0029
Total Copper	0.028	0.014	0.0053	0.0015	0.0012	0.0012
Total Nickel	0.094	0.047	0.0029	0.0031	0.0025	0.0025
Total Lead	0.030	0.015	0.00011	0.00007	0.00009	0.00008
Total Zinc	0.348	0.174	0.002	0.0035	0.0055	0.0040
Un-ionized Ammonia	0.2	0.1	0.122	0.117	0.109	0.114
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.81	7.82	7.63	7.70

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	September 10, 2016 In Pit Sump 3 (mg/L)	September 16, 2016 In Pit Sump 3 (mg/L)	September 17, 2016 In Pit Sump 3 (mg/L)	September 18, 2016 In Pit Sump 3 (mg/L)
Total Suspended Solids	30	15	4.0	3.5	3.5	4.0
Total Arsenic	0.034	0.017	0.0026	0.0041	0.0040	0.0040
Total Copper	0.028	0.014	0.0010	0.0027	0.0017	0.0018
Total Nickel	0.094	0.047	0.0023	0.0024	0.0020	0.0020
Total Lead	0.030	0.015	0.00006	0.00011	0.00011	0.00009
Total Zinc	0.348	0.174	0.0025	0.0125	0.0100	0.0055
Un-ionized Ammonia	0.2	0.1	0.126	0.019	0.045	0.159
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.71	6.89	7.28	7.89

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	September 17, 2016 Plant Site and Crusher Area Sediment Ponds (mg/L)	September 18, 2016 Plant Site and Crusher Area Sediment Ponds (mg/L)	September 16, 2016 West Mine Rock and OVB Sump 2 (mg/L)	September 17, 2016 West Mine Rock and OVB Sump 2 (mg/L)
Total Suspended Solids	30	15	7.0	27.5	7.0	8.5
Total Arsenic	0.034	0.017	0.0011	0.0012	0.0022	0.0022
Total Copper	0.028	0.014	0.0024	0.0029	0.0019	0.002
Total Nickel	0.094	0.047	0.0012	0.0015	0.0018	0.0019
Total Lead	0.030	0.015	0.00015	0.00037	0.00012	0.00026
Total Zinc	0.348	0.174	0.0045	0.0065	0.003	0.0065
Un-ionized Ammonia	0.2	0.1	0.005	0.004	0.025	0.071
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			8.30	8.10	7.16	7.60

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	September 12, 2016 WMP Excavated Pond (mg/L)	September 18, 2016 West Mine Rock and OVB Sump 2 (mg/L)	September 22, 2016 In Pit Sump 4 (mg/L)	September 23, 2016 In Pit Sump 4 (mg/L)
Total Suspended Solids	30	15	9.0	6.0	5.0	4.5
Total Arsenic	0.034	0.017	0.0025	0.0022	0.0039	0.0037
Total Copper	0.028	0.014	0.0090	0.002	0.0031	0.0025
Total Nickel	0.094	0.047	0.0025	0.0019	0.0039	0.0036
Total Lead	0.030	0.015	0.0005	0.00013	0.00028	0.00023
Total Zinc	0.348	0.174	0.0165	0.007	0.0095	0.005
Un-ionized Ammonia	0.2	0.1	0.031	0.065	0.013	0.022
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			8.68	7.58	6.94	7.21

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	September 23, 2016 In Pit Sump 4 (mg/L)	September 22, 2016 West Mine Rock and OVB Sump 1 (mg/L)	September 30, 2016 In Pit Sump 3 (mg/L)
Total Suspended Solids	30	15	4.5	2.5	3.0
Total Arsenic	0.034	0.017	0.0037	0.0021	0.0035
Total Copper	0.028	0.014	0.0025	0.0016	0.0019
Total Nickel	0.094	0.047	0.0036	0.0016	0.0028
Total Lead	0.030	0.015	0.00022	0.00008	0.00007
Total Zinc	0.348	0.174	0.005	0.0005	0.0065
Un-ionized Ammonia	0.2	0.1	0.021	0.006	0.068
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.21	6.8	7.41


SURFACE WATER SAMPLING LOCATIONS
Surface Water Sampling Location
Mine Footprint
Kilometers
Dearlock
Black Hawk
EMO
PINEWOOD
Wood
HIGHWAY 600
HIGHWAY 11
Pinewood River
Rainy River
SW2
SW3
SW10
SW15
SW16
SW17
SW20
SW21A
SW22A
SW23
SW24
SW25
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SW28A
SW29
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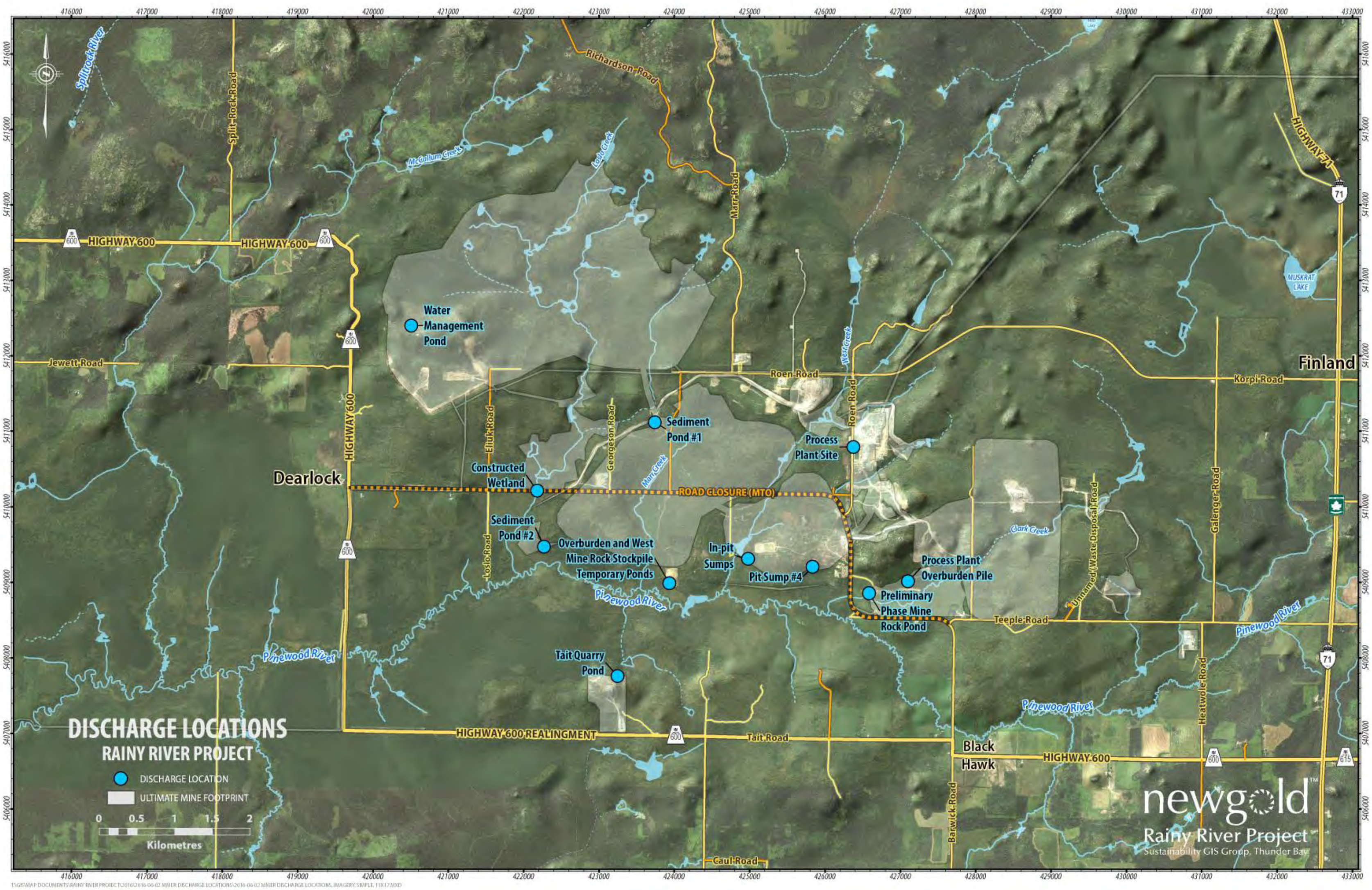
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To: Ray Boivin, Senior Environmental Officer, Kenora Area, MOECC

From: Darrell Martindale, Manager, Environment

Date: December 1, 2016

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- Construction on the Process Plant Overburden Pile (Mine Rock Pond Polishing Pond) was completed at the end of July 2015;
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- Construction discharge sampling for the Plant Site and Crusher Area Treatment Ponds was conducted on October 11, 12, 13, and 16, 2016.
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- Construction discharge sampling for the Overburden and West Mine Rock Stockpile Temporary Sump 2 was conducted on October 17, 18, and 28, 2016.
- Construction discharge sampling for In-Pit Sump 3 was conducted on October 1, 15, 16, 28, and 29, 2016.
- Construction discharge sampling for In-Pit Sump 4 was conducted on October 4 and 13, 2016.

1.0 Plant Site and Crusher Area Sediment Ponds

The Plant Site and Crusher Area Sediment Ponds commenced construction on May 17, 2015. Prior to that time sediment and erosion control measures were put in place beginning on 5 May which included silt fencing and settling ponds. As part of site preparation, water was released and used for dust

suppression from the site consistent with section 7(5) of the ECA. A single-polymer flocculant system was installed and commissioned on 15 July, 2015. This system was utilized in October, 2016 in the form of flocculant blocks.

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In-Pit Sump 4 commenced construction beginning of January, 2016. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. Due to the exceedance that occurred in the month of July, systems have been put in place to assist with treatment for un-ionized ammonia and total suspended solids. These systems include a sprinkler and dust suppression framework and a circulating flocculant system. Additional sampling measures have also been implemented which consist of sampling all four corners before discharge and taking three different samples over time at discharge.

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SW28A	Teeple Drain	T-Fe	0.37	0.3	0.3	-	-	-	-	-	-
SW3	Pinewood River	T-Al	0.126	0.075	0.1	-	-	0.36	2.77	0.0508	0.2625
SW3	Pinewood River	T-Fe	0.41	0.3	0.3	-	-	1.11	6.97	0.064	0.6885
SW10	Pinewood River	T-Al	0.47	0.075	0.1	-	-	0.8	32.3	0.292	0.1915
SW10	Pinewood River	T-Fe	0.53	0.3	0.3	-	-	1.70	42.3	0.287	0.623
SW15	Pinewood River	T-Al	0.59	0.075	0.1	-	-	0.68	4.95	0.05	0.46
SW15	Pinewood River	T-Fe	1.11	0.3	0.3	-	-	1.07	5.99	0.09	0.92
SW20	Pinewood River	T-Al	0.096	0.075	0.1	-	-	-	-	-	-
SW20	Pinewood River	T-Fe	0.51	0.3	0.3	-	-	-	-	-	-
SW21A	Pinewood River	T-Al	0.122	0.075	0.1	-	-	-	-	-	-
SW21A	Pinewood River	T-Fe	0.34	0.3	0.3	-	-	-	-	-	-
SW22A	Pinewood River	T-Al	0.086	0.075	0.1	-	-	-	-	-	-
SW16	Rainy River	T-Al	0.105	0.075	0.1	-	-	0.31	2.65	0.04	0.17
SW17	Rainy River	T-Al	0.156	0.075	0.1	-	-	0.23	1.71	0.05	0.13
SW17	Rainy River	T-Fe	0.34	0.3	0.3	-	-	0.35	1.95	0.08	0.24

Table 2: Summary of Effluent Results for Construction Phase Works Discharge

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	October 11, 2016 Plant Site and Crusher Area Sediment Ponds (mg/L)	October 12, 2016 Plant Site and Crusher Area Sediment Ponds (mg/L)	October 13, 2016 Plant Site and Crusher Area Sediment Ponds (mg/L)	October 16, 2016 Plant Site and Crusher Area Sediment Pond (mg/L)
Total Suspended Solids	30	15	7.0	7.0	5.0	7.5
Total Arsenic	0.034	0.017	0.0011	0.0011	0.0012	0.0011
Total Copper	0.028	0.014	0.0041	0.0042	0.00017	0.0025
Total Nickel	0.094	0.047	0.0017	0.0018	0.0017	0.0012
Total Lead	0.030	0.015	0.00006	0.00009	0.00006	0.0001
Total Zinc	0.348	0.174	0.008	0.0065	0.006	0.0045
Un-ionized Ammonia	0.2	0.1	0.013	0.001	0.001	0.001
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			8.58	7.80	8.49	8.43

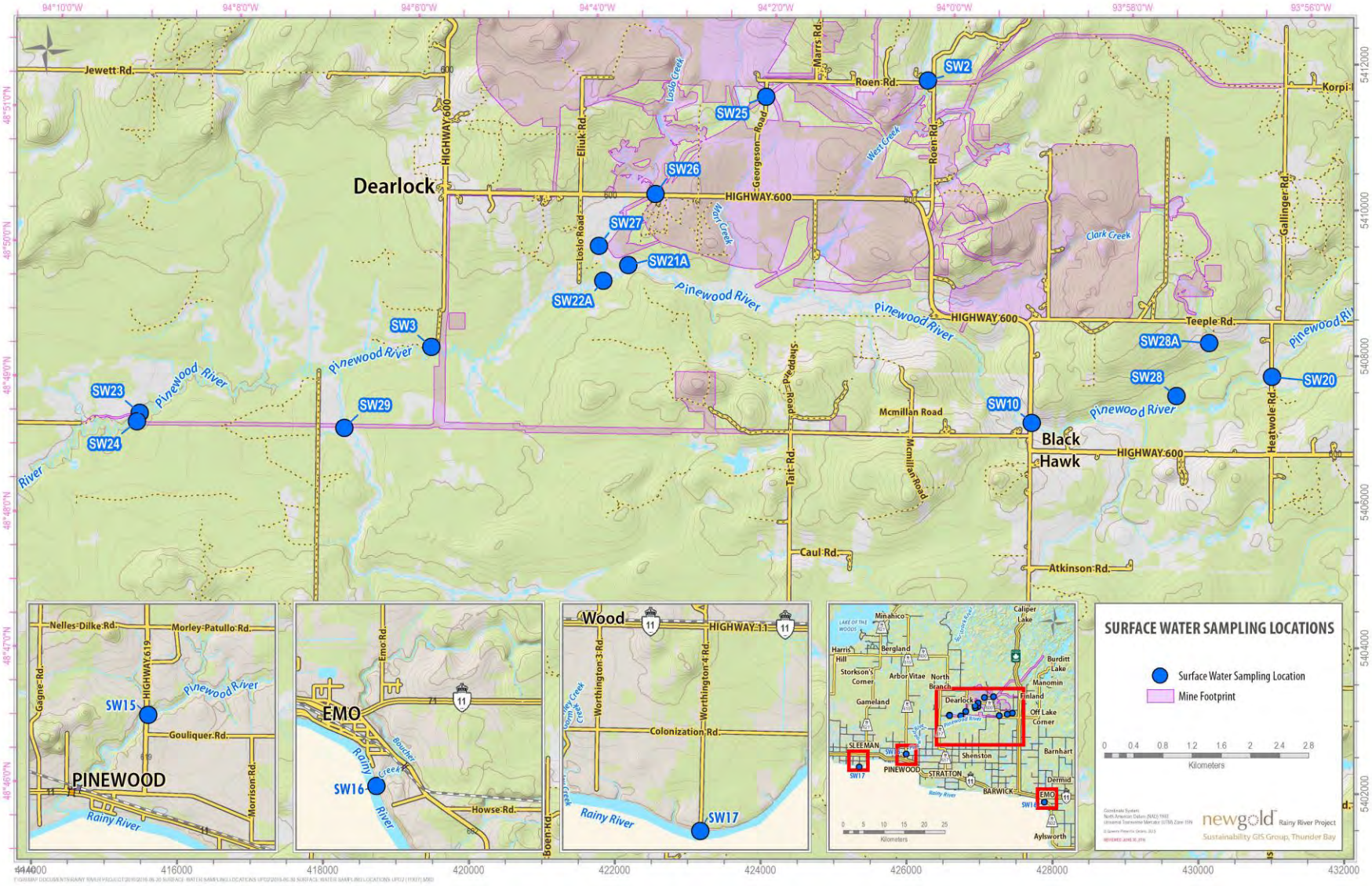
Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	October 1, 2016 In Pit Sump 3 (mg/L)	October 15, 2016 In Pit Sump 3 (mg/L)	October 16, 2016 In Pit Sump 3 (mg/L)	October 16, 2016 In Pit Sump 3 (mg/L)
Total Suspended Solids	30	15	3.5	19.5	21.0	8.5
Total Arsenic	0.034	0.017	0.0034	0.0024	0.0025	0.0024
Total Copper	0.028	0.014	0.0019	0.0010	0.0012	0.0008
Total Nickel	0.094	0.047	0.0027	0.0025	0.0026	0.0023
Total Lead	0.030	0.015	0.00007	0.00016	0.00025	0.00011
Total Zinc	0.348	0.174	0.0045	0.0065	0.0045	0.0035
Un-ionized Ammonia	0.2	0.1	0.106	0.045	0.088	0.054
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.59	7.71	8.03	7.85

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	October 28, 2016 In Pit Sump 3 (mg/L)	October 28, 2016 In Pit Sump 3 (mg/L)	October 29, 2016 In Pit Sump 3 (mg/L)	October 4, 2016 In Pit Sump 4 (mg/L)
Total Suspended Solids	30	15	7.5	10.5	7.5	9.5
Total Arsenic	0.034	0.017	0.0025	0.0026	0.0025	0.0025
Total Copper	0.028	0.014	0.0017	0.0018	0.0017	0.0022
Total Nickel	0.094	0.047	0.0038	0.004	0.0039	0.0046
Total Lead	0.030	0.015	0.00012	0.00015	0.00016	0.00002
Total Zinc	0.348	0.174	0.0035	0.004	0.015	0.01
Un-ionized Ammonia	0.2	0.1	0.131	0.093	0.011	0.031
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			8.30	8.17	7.24	7.35

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	October 4, 2016 In Pit Sump 4 (mg/L)	October 13, 2016 In Pit Sump 4 (mg/L)	October 3, 2016 West Mine Rock and OVB Sump 1 (mg/L)	October 4, 2016 West Mine Rock and OVB Sump 1 (mg/L)
Total Suspended Solids	30	15	6.5	3.0	7.5	18.5
Total Arsenic	0.034	0.017	0.0024	0.0020	0.0016	0.0017
Total Copper	0.028	0.014	0.0019	0.0012	0.0020	0.0022
Total Nickel	0.094	0.047	0.0046	0.0037	0.0016	0.0019
Total Lead	0.030	0.015	0.00006	0.00006	0.0001	0.0003
Total Zinc	0.348	0.174	0.0085	0.0030	0.0025	0.0035
Un-ionized Ammonia	0.2	0.1	0.049	0.057	0.017	0.047
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.56	7.69	7.62	8.18

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	October 21, 2016 West Mine Rock and OVB Sump 1 (mg/L)	October 21, 2016 West Mine Rock and OVB Sump 1 (mg/L)	October 17, 2016 West Mine Rock and OVB Sump 2 (mg/L)	October 18, 2016 West Mine Rock and OVB Sump 2 (mg/L)
Total Suspended Solids	30	15	6.5	4.5	8.0	6.0
Total Arsenic	0.034	0.017	0.0012	0.0011	0.0024	0.0024
Total Copper	0.028	0.014	0.0020	0.0017	0.0015	0.0014
Total Nickel	0.094	0.047	0.0017	0.0014	0.0031	0.0031
Total Lead	0.030	0.015	0.0002	0.00006	0.0001	0.0002
Total Zinc	0.348	0.174	0.0020	0.001	0.0055	0.0255
Un-ionized Ammonia	0.2	0.1	0.008	0.011	0.016	0.025
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			8.40	8.60	7.22	7.42

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	October 28, 2016 West Mine Rock and OVB Sump 2 (mg/L)	October 3, 2016 WMP Excavated Pond (Borrow) (mg/L)
Total Suspended Solids	30	15	3.0	15.0
Total Arsenic	0.034	0.017	0.0027	0.0023
Total Copper	0.028	0.014	0.0010	0.0035
Total Nickel	0.094	0.047	0.0024	0.0029
Total Lead	0.030	0.015	0.00012	0.0004
Total Zinc	0.348	0.174	0.0075	0.0055
Un-ionized Ammonia	0.2	0.1	0.0090	0.0080
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.24	8.34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SW3
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SW20
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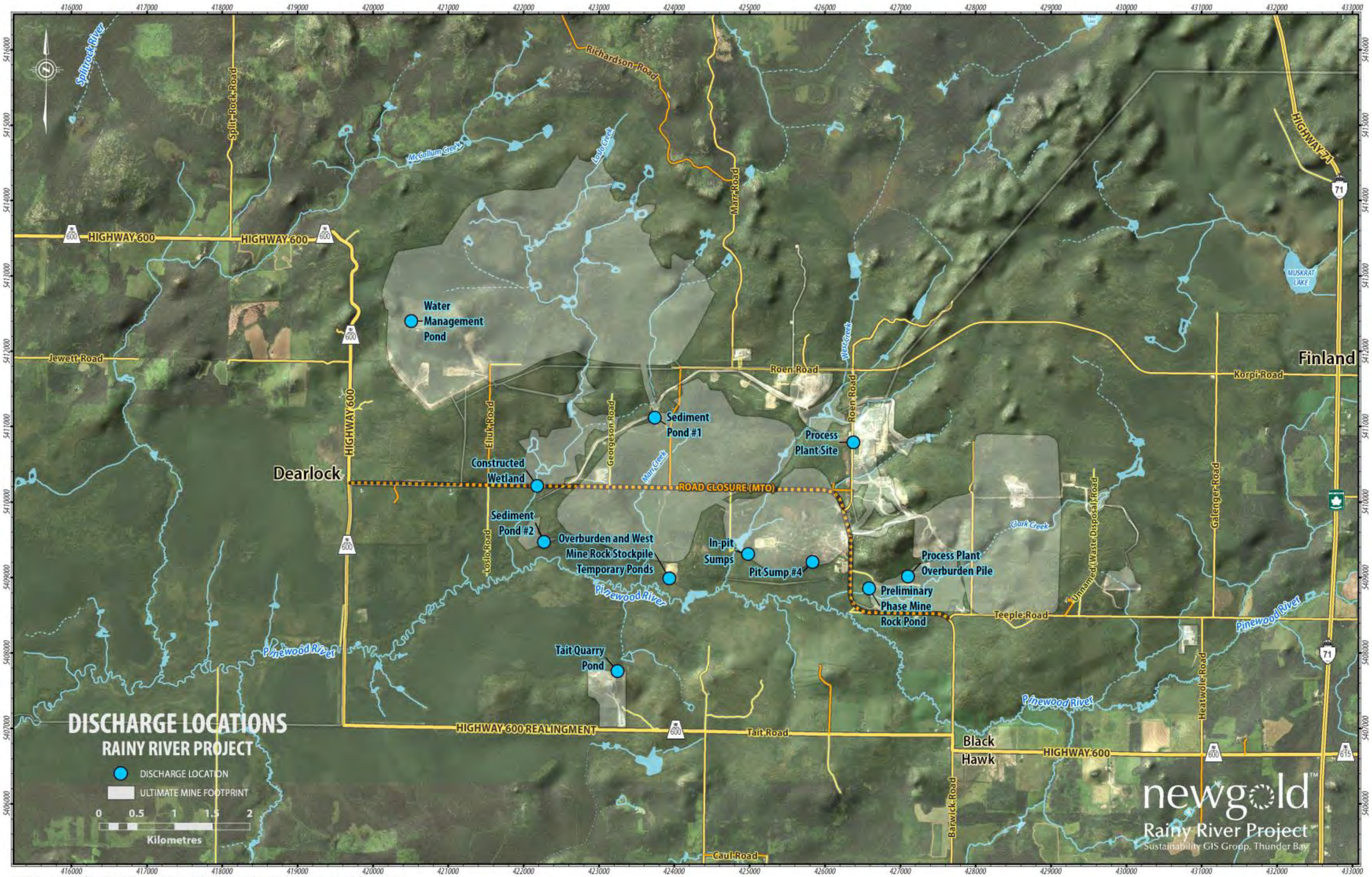
SW22A
SW23
SW24
SW25
SW26
SW27
SW28
SW28A
SW29
HIGHWAY 600
HIGHWAY 11
HIGHWAY 619
Pinewood River
Rainy River
Jewett Rd.
Roen Rd.
Teeple Rd.
Atkinson Rd.
Caul Rd.
Mcmillan Road
Colonization Rd.
Howse Rd.
Gouliquer Rd.
Morley Patullo Rd.
Nelles Dilke Rd.
SURFACE WATER SAMPLING LOCATIONS
Surface Water Sampling Location
Mine Footprint
Kilometers
newgold Rainy River Project
Sustainability GIS Group, Thunder Bay


DISCHARGE LOCATIONS
RAINY RIVER PROJECT
DISCHARGE LOCATION
ULTIMATE MINE FOOTPRINT
Kilometres
Water Management Pond
Sediment Pond #1
Process Plant Site
Constructed Wetland
Sediment Pond #2
Overburden and West Mine Rock Stockpile Temporary Ponds
In-pit Sumps
Pit Sump #4
Process Plant Overburden Pile
Preliminary Phase Mine Rock Pond
Tait Quarry Pond
ROAD CLOSURE (MTO)
Dearlock
Finland
Black Hawk
HIGHWAY 600
HIGHWAY 600 REALINGMENT
HIGHWAY 71
Roen Road
Korpi Road
Teeple Road
Tait Road
Caul Road
Jewett Road
Richardson Road
Pinewood River
MUSKRAT LAKE
newgold
Rainy River Project
Sustainability GIS Group, Thunder Bay

Memorandum

To: Ray Boivin, Senior Environmental Officer, Kenora Area, MOECC

From: Darrell Martindale, Manager, Environment

Date: January 4, 2017

Re: **Monthly Surface Water Quality Results Summary – November 2016**

The following document has been provided consistent with Environmental Compliance Approval (ECA) # 5781-9VJQ2J, section 13(3) issued May 8, 2015. The purpose of the report is to provide a summary of monitoring activities related to the approved works.

Monitoring for November 2016 was applicable to the stage of project development;

- Construction on the Plant Site and Crusher Area Temporary Treatment Ponds was completed at the end of July, 2015;
- Construction on In-Pit Sump 3 was completed at the beginning of September, 2015;
- Construction on In-Pit Sump 4 was completed at the beginning of March, 2016 and commissioned in April, 2016;
- Construction on Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2 began in October, 2015;
- Construction on the Process Plant Overburden Pile (Mine Rock Pond Polishing Pond) was completed at the end of July 2015;
- Construction on the WMP Excavated Pond (Borrow) was completed August 2016;
- Surface water sampling was conducted on November 16, 2016.
- Construction discharge sampling for the Plant Site and Crusher Area Treatment Ponds (Plant Site Polishing Pond) was conducted on November 23, 2016.
- Construction discharge sampling for the Plant Site and Crusher Area Treatment Ponds (North Pond) was conducted on November 27 and 28, 2016.
- Construction discharge sampling for the Overburden and West Mine Rock Stockpile Temporary Sump 2 was conducted on November 11, 12, and 21, 2016.
- Construction discharge sampling for In-Pit Sump 3 was conducted on November 8, 21, and 23, 2016.
- Construction discharge sampling for In-Pit Sump 4 was conducted on November 6, 16, and 17, 2016.

1.0 Plant Site and Crusher Area Sediment Ponds

The Plant Site and Crusher Area Sediment Ponds commenced construction on May 17, 2015. Prior to that time sediment and erosion control measures were put in place beginning on 5 May which included silt fencing and settling ponds. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. A single-polymer flocculant system was installed and commissioned on 15 July, 2015. This system was utilized in November, 2016 in the form of flocculant blocks.

1.1 In-Pit Sump 3

In-Pit Sump 3 commenced construction on August 20, 2015. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. Due to the exceedances that occurred in the month of July, systems have been put in place to assist with treatment for un-ionized ammonia and total suspended solids. These systems include proper drainage ditching around sump to prevent non-contact water from entering, flocculant blocks at input, topsoil and seed, and a three-tier splash pad at input. Additional sampling measures have also been implemented which consist of sampling all four corners before discharge and taking three different samples over time at discharge.

1.2 In-Pit Sump 4

In-Pit Sump 4 commenced construction beginning of January, 2016. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. Due to the exceedance that occurred in the month of July, systems have been put in place to assist with treatment for un-ionized ammonia and total suspended solids. These systems include a sprinkler and dust suppression framework and a circulating flocculant system. Additional sampling measures have also been implemented which consist of sampling all four corners before discharge and taking three different samples over time at discharge.

1.3 Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2

Sumps 1 and 2 commenced construction in October, 2015 as part of the ditching system to catch runoff from the Overburden and West Mine Rock Stockpiles. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

Per approval letter received August 25, 2016 from the Ministry of Environment and Climate Change, these sumps are now being used to store excess water from the In Pit Sumps. This allows for additional capacity and retention time to protect the Pinewood River from the potential adverse effects posed by high un-ionized ammonia levels.

1.4 Process Plant Overburden Pile (Mine Rock Sediment and Polishing Ponds)

Mine Rock Sediment and Polishing Ponds commenced construction at the beginning of 2015 as part of the ditching system to catch runoff from the Process Plant Overburden Stockpile. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

1.5 WMP Excavated Pond (Borrow)

WMP Excavated Pond (Borrow) commenced construction in 2015. The pond was reworked in August 2016 to allow all water from inside the Water Management Pond dams to drain to this collection system.

2.0 Effluent Sampling and Results

Sampling of the construction phase works occurred at discharge on November 23, 2016 from the Process Plant and Crusher Area Sediment Ponds (Plant Site Polishing Pond), on November 27 and 28, 2016 from the Process Plant and Crusher Area Sediment Ponds (North Runoff Pond), on November 8, 21, and 23, 2016 from In Pit Sump 3, on November 6, 16, and 17, 2016 from In Pit Sump 4, on November 11, 12, and 21, 2016 from West Mine Rock and OVB Sump 2, and November 23 and 25, 2016 from Mine Rock Pond Polishing Pond. The sampling is to provide indication of performance of works relative to predicted performance and allow for water treatment to be tailored based on inputs.

3.0 Surface Water Sampling

Surface water sampling was conducted on November 16, 2016. The following sites were not sampled for the given reasons;

- SW23, SW24, and SW29 do not require sampling as of yet as the triggering milestones have not yet been reached with construction.
- SW25 and SW26, although identified as requiring sampling within one month of the receipt of the ECA, are located along the planned route of the West Creek Diversion which has yet to be commissioned.

Sampling was conducted at the remaining sites following MISA protocols.

3.1 Summary of Analysis

Construction Phase Works Discharges met all Effluent Limits set out in the ECA except for the Process Plant and Crusher Area Sediment Ponds (Plant Site Polishing Pond) discharge that occurred November 23, 2016. The Total Suspended Solids (TSS) daily maximum limit was exceeded with a TSS of 46.0 mg/L. Please refer to letter addressing this incident sent on November 30, 2016 (SAC 6347-AG4JZH).

Surface water sampling results met PWQO, CEQG and ECA levels except for total iron and total aluminum at some sites in the Pinewood River and the Rainy River (Table 1). The sites were both upstream and downstream of the Project site and results are consistent with baseline results.

QA/QC procedures met expected controls (e.g., 20 % relative percent difference) except;

- Some field duplicate parameter pairs exceeded the RPD limit of 40%, although none of these parameter pairs exhibited concentrations greater than three times the detection limit. As a result, no implications to data quality are expected based on these exceedances.

4.0 Non-Routine Procedures

There were no non-routine calibration or maintenance procedures carried out on any major structure, equipment, apparatus, mechanism or thing forming a part of the sewage works during the reporting period.

5.0 Bypass or Upset Summary

No bypass or upset conditions occurred during the reporting period.

Table 1: Summary of Surface Water Sampling Results Where PWQO, CEQG, or ECA Were Exceeded

Site	Water Body	Parameter	Sample Concentration (mg/L)	PWQO (mg/L)	CEQG (mg/L)	ECA (mg/L)	MISA Qualifier	Historic Avg (mg/L)	Historic Max (mg/L)	Historic Min (mg/L)	Historic Median (mg/L)
SW3	Pinewood River	T-Al	0.174	0.075	0.1	-	-	0.36	2.77	0.0508	0.2625
SW3	Pinewood River	T-Fe	0.52	0.3	0.3	-	-	1.11	6.97	0.064	0.6885
SW10	Pinewood River	T-Al	0.139	0.075	0.1	-	-	0.8	32.3	0.292	0.1915
SW10	Pinewood River	T-Fe	0.56	0.3	0.3	-	-	1.70	42.3	0.287	0.623
SW15	Pinewood River	T-Al	0.697	0.075	0.1	-	-	0.68	4.95	0.05	0.46
SW15	Pinewood River	T-Fe	1.17	0.3	0.3	-	-	1.07	5.99	0.09	0.92
SW20	Pinewood River	T-Al	0.186	0.075	0.1	-	-	-	-	-	-
SW20	Pinewood River	T-Fe	0.7	0.3	0.3	-	-	-	-	-	-
SW22A	Pinewood River	T-Al	0.103	0.075	0.1	-	-	-	-	-	-
SW22A	Pinewood River	T-Fe	0.31	0.3	0.3	-	-	-	-	-	-
SW16	Rainy River	T-Al	0.107	0.075	0.1	-	-	0.31	2.65	0.04	0.17
SW17	Rainy River	T-Al	0.165	0.075	0.1	-	-	0.23	1.71	0.05	0.13
SW17	Rainy River	T-Fe	0.31	0.3	0.3	-	-	0.35	1.95	0.08	0.24

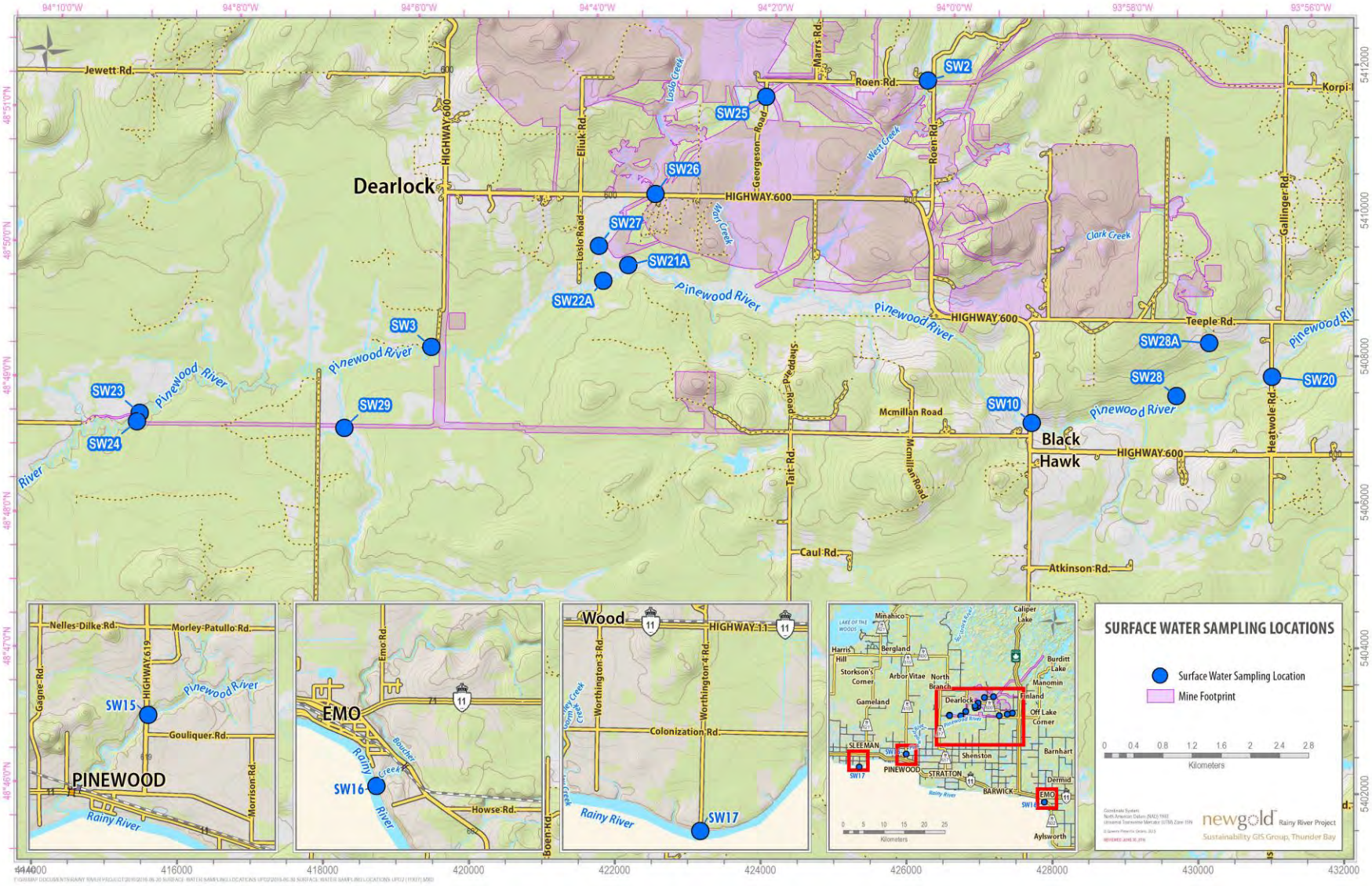
Table 2: Summary of Effluent Results for Construction Phase Works Discharge

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	November 23, 2016 Plant Site and Crusher Area Sediment Ponds (Plant Site Polishing Pond) (mg/L)	November 27, 2016 Plant Site and Crusher Area Sediment Ponds (North Runoff Pond) (mg/L)	November 28, 2016 Plant Site and Crusher Area Sediment Ponds (North Runoff Pond) (mg/L)	November 23, 2016 Plant Site Overburden Pile (Mine Rock Pond Polishing Pond) (mg/L)
Total Suspended Solids	30	15	46.0	3.5	16.5	3.5
Total Arsenic	0.034	0.017	0.001	0.0007	0.0007	0.0014
Total Copper	0.028	0.014	0.0033	0.0023	0.0024	0.0022
Total Nickel	0.094	0.047	0.0027	0.0043	0.0063	0.0013
Total Lead	0.030	0.015	0.0002	0.00017	0.00019	0.00003
Total Zinc	0.348	0.174	0.0085	0.0115	0.0085	0.002
Un-ionized Ammonia	0.2	0.1	0.002	0.002	0.002	0.001
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			8.10	8.21	8.16	8.13

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	November 25, 2016 Plant Site Overburden Pile (Mine Rock Pond Polishing Pond) (mg/L)	November 6, 2016 In Pit Sump 4 (mg/L)	November 8, 2016 In Pit Sump 3 (mg/L)	November 16, 2016 In Pit Sump 3 (mg/L)
Total Suspended Solids	30	15	2.0	5.0	3.5	6.5
Total Arsenic	0.034	0.017	0.0014	0.0026	0.0025	0.003
Total Copper	0.028	0.014	0.0024	0.0007	0.0014	0.0018
Total Nickel	0.094	0.047	0.0033	0.0049	0.0047	0.0041
Total Lead	0.030	0.015	0.00004	0.00007	0.00017	0.00013
Total Zinc	0.348	0.174	0.0025	0.005	0.011	0.006
Un-ionized Ammonia	0.2	0.1	0.001	0.027	0.016	0.005
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			8.45	7.51	0.016	6.88

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	November 17, 2016 In Pit Sump 4 (mg/L)	November 21, 2016 In Pit Sump 3 (mg/L)	November 23, 2016 In Pit Sump 3 (mg/L)	November 11, 2016 West Mine Rock and OVB Sump 2 (mg/L)
Total Suspended Solids	30	15	6.5	8.0	9.5	7.5
Total Arsenic	0.034	0.017	0.0028	0.0024	0.0024	0.002
Total Copper	0.028	0.014	0.0016	0.0007	0.0008	0.0011
Total Nickel	0.094	0.047	0.004	0.0039	0.0039	0.0034
Total Lead	0.030	0.015	0.00013	0.0001	0.0001	0.00011
Total Zinc	0.348	0.174	0.0045	0.0105	0.0115	0.006
Un-ionized Ammonia	0.2	0.1	0.007	0.008	0.005	0.004
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.30	7.23	7.11	7.35

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	November 12, 2016 West Mine Rock and OVB Sump 2 (mg/L)	November 21, 2016 West Mine Rock and OVB Sump 2 (mg/L)	November 21, 2016 West Mine Rock and OVB Sump 2 (mg/L)
Total Suspended Solids	30	15	11.5	7.5	3.5
Total Arsenic	0.034	0.017	0.002	0.002	0.002
Total Copper	0.028	0.014	0.0013	0.0009	0.0007
Total Nickel	0.094	0.047	0.0036	0.0029	0.0031
Total Lead	0.030	0.015	0.00013	0.00007	0.00008
Total Zinc	0.348	0.174	0.0045	0.0045	0.0045
Un-ionized Ammonia	0.2	0.1	0.004	0.004	0.004
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			6.86	6.92	6.91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Gallinger Rd.
Teeple Rd.
Pinewood River
SW2
SW25
SW26
SW27
SW21A
SW22A
SW3
SW23
SW24
SW29
SW28A
SW28
SW20
SW10
Black Hawk
Heatwole Rd.
Mcmillan Road
Tait Rd.
Caul Rd.
Atkinson Rd.
Sheppard Road
Nelles Dilke Rd.
Morley Patullo Rd.
HIGHWAY 619
Gagne Rd.
Gouliquer Rd.
Morrison Rd.
PINEWOOD
SW15
Rainy River
EMO
Emo Rd.
Howse Rd.
SW16
Boen Rd.
Wood
HIGHWAY 11
Worthington 3 Rd.
Worthington 4 Rd.
Colonization Rd.
SW17
Minahico
Caliper Lake
Harris Hill
Bergland
Burditt Lake
Storkson's Corner
Arbor Vitae
North Branch
Manomin
Gameland
Finland
Off Lake Corner
SLEEMAN
Shenston
Barnhart
STRATTON
BARWICK
Dermid
Aylsworth
SURFACE WATER SAMPLING LOCATIONS
Surface Water Sampling Location
Mine Footprint
Kilometers
newgold Rainy River Project
Sustainability GIS Group, Thunder Bay
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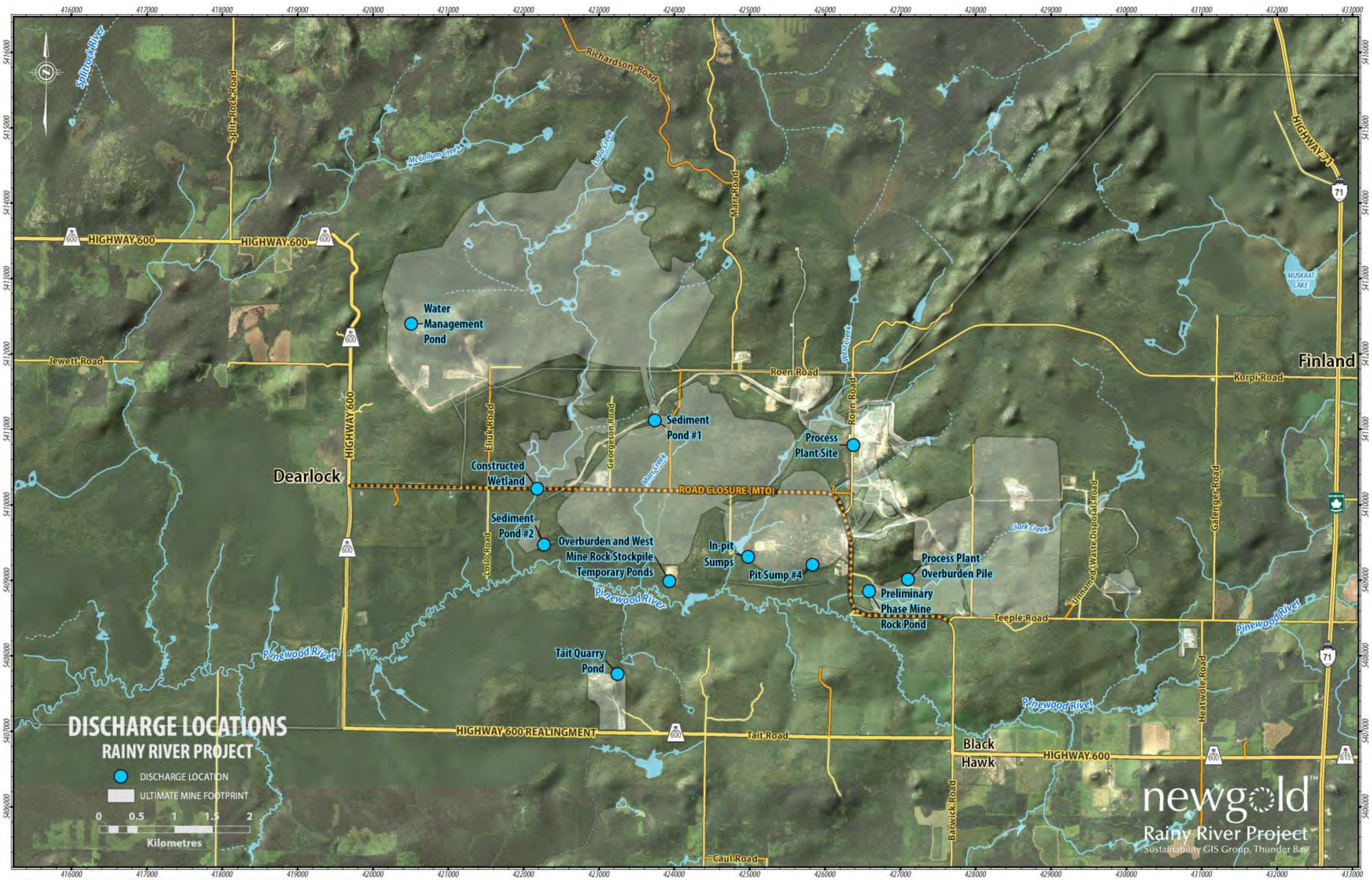
DISCHARGE LOCATIONS
RAINY RIVER PROJECT
DISCHARGE LOCATION
ULTIMATE MINE FOOTPRINT
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Kilometres
Water Management Pond
Sediment Pond #1
Process Plant Site
Constructed Wetland
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Preliminary Phase Mine Rock Pond
Tait Quarry Pond
ROAD CLOSURE (MTO)
HIGHWAY 600
HIGHWAY 600 REALIGNMENT
HIGHWAY 71
Dearlock
Finland
Black Hawk
Roen Road
Korpi Road
Teeple Road
Tait Road
Caul Road
Jewett Road
Richardson Road
Pinewood River
newgold Rainy River Project
Sustainability GIS Group, Thunder Bay

Memorandum

To: Ray Boivin, Senior Environmental Officer, Kenora Area, MOECC

From: Darrell Martindale, Manager, Environment

Date: January 31, 2017

Re: **Monthly Surface Water Quality Results Summary – December 2016**

The following document has been provided consistent with Environmental Compliance Approval (ECA) # 5781-9VJQ2J, section 13(3) issued May 8, 2015. The purpose of the report is to provide a summary of monitoring activities related to the approved works.

Monitoring for November 2016 was applicable to the stage of project development;

- Construction on the Plant Site and Crusher Area Temporary Treatment Ponds was completed at the end of July, 2015;
- Construction on In-Pit Sump 3 was completed at the beginning of September, 2015;
- Construction on In-Pit Sump 4 was completed at the beginning of March, 2016;
- Construction on Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2 was completed at the end of August, 2016;
- Construction on the Process Plant Overburden Pile (Mine Rock Pond Polishing Pond) was completed at the end of July 2015;
- Construction on the WMP Excavated Pond (Borrow) was completed August 2016;
- Surface water sampling was conducted on December 21, 2016.
- Construction discharge sampling for the Plant Site and Crusher Area Treatment Ponds (South Runoff Pond) was conducted on December 11 and 12, 2016.
- Construction discharge sampling for In-Pit Sump 3 was conducted on December 7 and 20, 2016.
- Construction discharge sampling for In-Pit Sump 4 was conducted on December 2, 3, 11, 12, and 29, 2016.

1.0 Plant Site and Crusher Area Sediment Ponds

The Plant Site and Crusher Area Sediment Ponds commenced construction on May 17, 2015. Prior to that time sediment and erosion control measures were put in place beginning on 5 May which included silt fencing and settling ponds. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA. A single-polymer flocculant system was installed and commissioned on 15 July, 2015. This system was utilized in December, 2016 in the form of flocculant blocks.

1.1 In-Pit Sump 3

In-Pit Sump 3 commenced construction on August 20, 2015. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA.

In 2016, systems have been put in place to assist with treatment for un-ionized ammonia and total suspended solids. These systems include flocculant blocks and a three-tier splash pad at input. Additional sampling measures have also been implemented which consist of sampling all corners before discharge as well as taking an average of three samples over time at discharge.

At the end of December, In Pit Sump 3 was decommissioned as the Open Pit progressed to the West.

1.2 In-Pit Sump 4

In-Pit Sump 4 commenced construction beginning of January, 2016. Prior to that time sediment and erosion control measures were put in place which included silt fencing. As part of site preparation, water was released and used for dust suppression from the site consistent with section 7(5) of the ECA.

In 2016, systems have been put in place to assist with treatment for un-ionized ammonia and total suspended solids. These systems include multiple structures to fill vehicles for dust suppression and a circulating flocculant system. Additional sampling measures have also been implemented which consist of sampling all corners before discharge and taking an average of three samples over time at discharge.

Per approval letter received November 8, 2016 from the Ministry of Environment and Climate Change, a temporary portable ammonia treatment facility was installed at the end of December with the purpose of reducing un-ionized ammonia at In-Pit Sump 4. If proven to be effective, this system will be used at all sumps receiving mine effluent.

1.3 Overburden and West Mine Rock Stockpile Temporary Sumps 1 and 2

Sumps 1 and 2 commenced construction in October, 2015 as part of the ditching system to catch runoff from the Overburden and West Mine Rock Stockpiles. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

Per approval letter received August 25, 2016 from the Ministry of Environment and Climate Change, these sumps are now being used to store excess water from the In Pit Sumps. This allows for additional capacity and retention time to protect the Pinewood River from the potential adverse effects posed by high un-ionized ammonia levels.

1.4 Process Plant Overburden Pile (Mine Rock Sediment and Polishing Ponds)

Mine Rock Sediment and Polishing Ponds commenced construction at the beginning of 2015 as part of the ditching system to catch runoff from the Process Plant Overburden Stockpile. Prior to that time sediment and erosion control measures were put in place which included silt fencing.

1.5 WMP Excavated Pond (Borrow)

WMP Excavated Pond (Borrow) commenced construction in 2015. The pond floor was reworked in August, 2016 to allow all water from inside the WMP dams to collect to a single location for water management.

2.0 Effluent Sampling and Results

Sampling of the construction phase works occurred at discharge on December 11 and 12, 2016 from the Process Plant and Crusher Area Sediment Ponds (South Runoff Pond), on December 7 and 20, 2016 from In Pit Sump 3, and on December 2, 3, 11, 12, and 29, 2016 from In Pit Sump 4. The sampling is to provide indication of performance of works relative to predicted performance and allow for water treatment to be tailored based on inputs.

3.0 Surface Water Sampling

Surface water sampling was conducted on December 21, 2016. The following sites were not sampled for the given reasons;

- SW23, SW24, and SW29 do not require sampling as the triggering milestones have not yet been reached with construction.
- SW25 and SW26, although identified as requiring sampling within one month of the receipt of the ECA, are located along the planned route of the West Creek Diversion which has yet to be commissioned.
- SW22A due to unsafe ice conditions.
- SW2 and SW28A due to waterway being frozen to bottom.

Sampling was conducted at the remaining sites following MISA protocols.

3.1 Summary of Analysis

Construction Phase Works Discharges met all Effluent Limits in December 2016 set out in section 7(2) of ECA 5781-9VJQ2J.

Surface water sampling results met PWQO, CEQG and ECA levels except for total iron, total aluminum and total zinc at some sites in the Pinewood River, the Rainy River, and Loslo Creek (Table 1). The sites were both upstream and downstream of the Project site and results are consistent with baseline results.

QA/QC procedures met expected controls (e.g., 20 % relative percent difference) except;

- Some field duplicate parameter pairs exceeded the RPD limit of 40%, although none of these parameter pairs exhibited concentrations greater than three times the detection limit. As a result, no implications to data quality are expected based on these exceedances.

4.0 Non-Routine Procedures

There were no non-routine calibration or maintenance procedures carried out on any major structure, equipment, apparatus, mechanism or thing forming a part of the sewage works during the reporting period.

5.0 Bypass or Upset Summary

No bypass or upset conditions occurred during the reporting period.

Table 1: Summary of Surface Water Sampling Results Where PWQO, CEQG, or ECA Were Exceeded

Site	Water Body	Parameter	Sample Concentration (mg/L)	PWQO (mg/L)	CEQG (mg/L)	ECA (mg/L)	MISA Qualifier	Historic Avg (mg/L)	Historic Max (mg/L)	Historic Min (mg/L)	Historic Median (mg/L)
SW3	Pinewood River	T-Al	0.256	0.075	0.1	-	-	0.36	2.77	0.0508	0.2625
SW3	Pinewood River	T-Fe	0.88	0.3	0.3	-	-	1.11	6.97	0.064	0.6885
SW10	Pinewood River	T-Al	0.2	0.075	0.1	-	-	0.8	32.3	0.292	0.1915
SW10	Pinewood River	T-Fe	0.9	0.3	0.3	-	-	1.70	42.3	0.287	0.623
SW10	Pinewood River	T-Zn	0.022	0.02	-	-	-	0.02	0.34	0.0025	0.0046
SW15	Pinewood River	T-Al	0.545	0.075	0.1	-	-	0.68	4.95	0.05	0.46
SW15	Pinewood River	T-Fe	1.09	0.3	0.3	-	-	1.07	5.99	0.09	0.92
SW20	Pinewood River	T-Al	0.291	0.075	0.1	-	-	-	-	-	-
SW20	Pinewood River	T-Fe	1.03	0.3	0.3	-	-	-	-	-	-
SW21A	Pinewood River	T-Al	0.146	0.075	0.1	-	-	-	-	-	-
SW21A	Pinewood River	T-Fe	0.6	0.3	0.3	-	-	-	-	-	-
SW21A	Pinewood River	T-Zn	0.0225	0.02	-	-	-	-	-	-	-
SW27	Loslo Creek	T-Al	0.099	0.075	0.1	-	-	-	-	-	-
SW27	Loslo Creek	T-Fe	1.11	0.3	0.3	-	-	-	-	-	-
SW16	Rainy River	T-Al	0.0795	0.075	0.1	-	-	0.31	2.65	0.04	0.17
SW17	Rainy River	T-Al	0.139	0.075	0.1	-	-	0.23	1.71	0.05	0.13

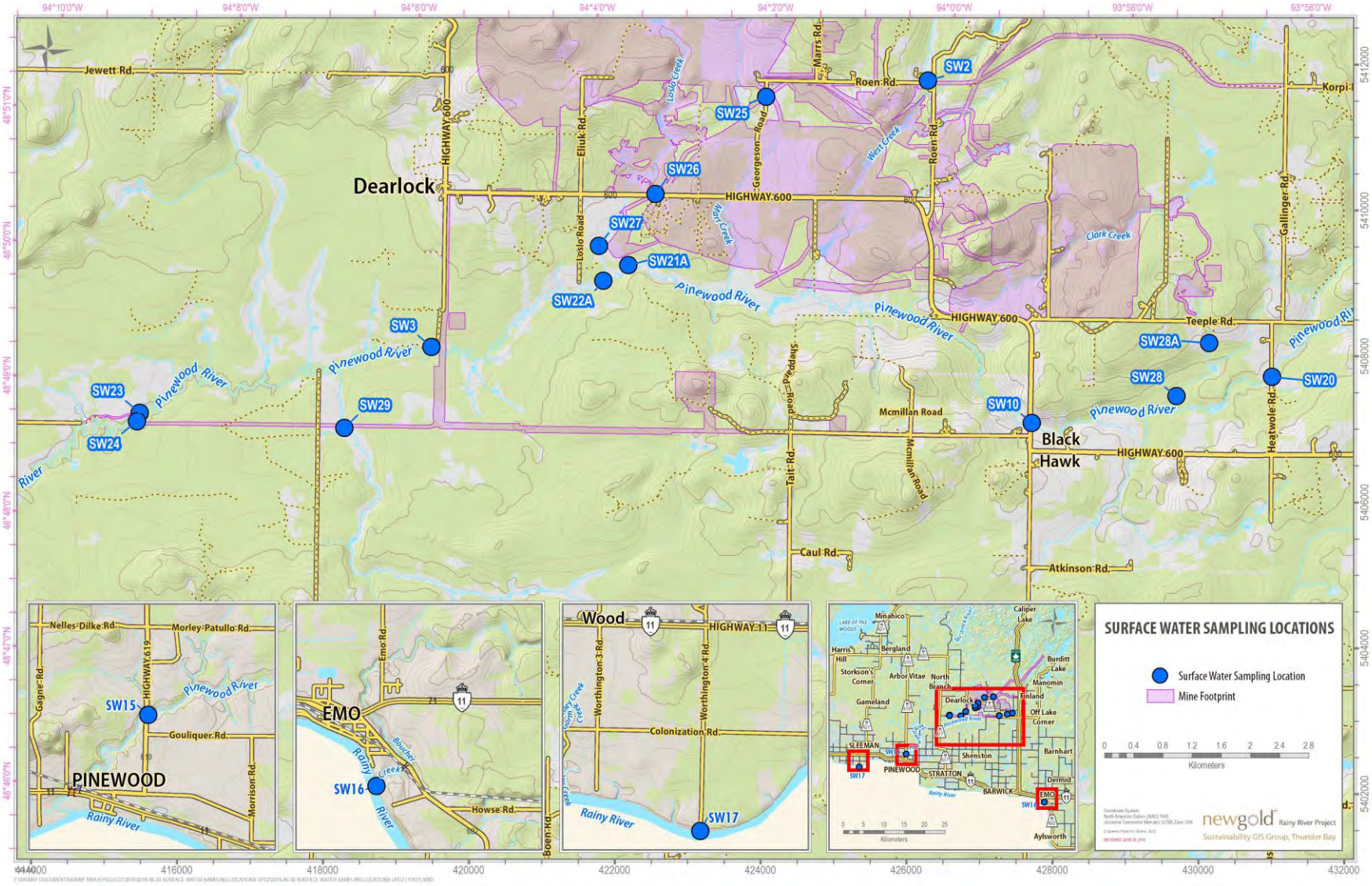
Table 2: Summary of Effluent Results for Construction Phase Works Discharge

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	December 2, 2016 In Pit Sump 4 (mg/L)	December 2, 2016 In Pit Sump 4 (mg/L)	December 3, 2016 In Pit Sump 4 (mg/L)	December 7, 2016 In Pit Sump 3 (mg/L)
Total Suspended Solids	30	15	4.0	3.5	2.5	3.5
Total Arsenic	0.034	0.017	0.0027	0.0028	0.0026	0.0026
Total Copper	0.028	0.014	0.0018	0.0017	0.0016	0.0018
Total Nickel	0.094	0.047	0.0041	0.004	0.0038	0.0039
Total Lead	0.030	0.015	0.0001	0.00009	0.00006	0.0001
Total Zinc	0.348	0.174	0.011	0.007	0.0055	0.0105
Un-ionized Ammonia	0.2	0.1	0.007	0.015	0.011	0.008
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pas	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.21	7.50	7.39	7.25

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	December 7, 2016 In Pit Sump 3 (mg/L)	December 11, 2016 In Pit Sump 4 (mg/L)	December 12, 2016 In Pit Sump 4 (mg/L)	December 12, 2016 In Pit Sump 4 (mg/L)
Total Suspended Solids	30	15	4.0	2.5	0.5	1.5
Total Arsenic	0.034	0.017	0.0025	0.0023	0.0023	0.0023
Total Copper	0.028	0.014	0.0027	0.001	0.0147	0.0011
Total Nickel	0.094	0.047	0.0039	0.0052	0.0051	0.0053
Total Lead	0.030	0.015	0.00015	0.00007	0.00078	0.00006
Total Zinc	0.348	0.174	0.011	0.013	0.025	0.016
Un-ionized Ammonia	0.2	0.1	0.008	0.01	0.01	0.01
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.25	7.15	7.17	7.18

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	December 20, 2016 In Pit Sump 3 (mg/L)	December 29, 2016 In Pit Sump 4 (mg/L)	December 11, 2016 Process Plant and Crusher Area Sediment Ponds (South Runoff Pond) (mg/L)	December 11, 2016 Process Plant and Crusher Area Sediment Ponds (South Runoff Pond) (mg/L)
Total Suspended Solids	30	15	5.5	19.0	5.5	4.0
Total Arsenic	0.034	0.017	0.0028	0.0024	0.001	0.001
Total Copper	0.028	0.014	0.0018	0.0007	0.0051	0.0058
Total Nickel	0.094	0.047	0.0055	0.007	0.0032	0.0026
Total Lead	0.030	0.015	0.0001	0.00014	0.00016	0.00013
Total Zinc	0.348	0.174	0.015	0.02	0.0225	0.0225
Un-ionized Ammonia	0.2	0.1	0.009	0.013	0.001	0.001
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass	Pass	Pass	Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			7.19	7.28	8.05	7.78

Effluent Parameter	Daily Maximum Concentration (mg/L)	Monthly Average Concentration (mg/L)	December 12, 2016 Process Plant and Crusher Area Sediment Ponds (South Runoff Pond) (mg/L)
Total Suspended Solids	30	15	6.5
Total Arsenic	0.034	0.017	0.001
Total Copper	0.028	0.014	0.0054
Total Nickel	0.094	0.047	0.0029
Total Lead	0.030	0.015	0.00013
Total Zinc	0.348	0.174	0.0225
Un-ionized Ammonia	0.2	0.1	0.001
Acute Toxicity (Rainbow Trout and Daphnia Magna)	Non-acutely lethality (not greater than 50% mortality in undiluted effluent)		Pass
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			8.14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Gallinger Rd.
Teeple Rd.
Pinewood River
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SW25
SW26
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SW22A
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Tait Rd.
Caul Rd.
Atkinson Rd.
Sheppard Road
Nelles Dilke Rd.
Morley Patullo Rd.
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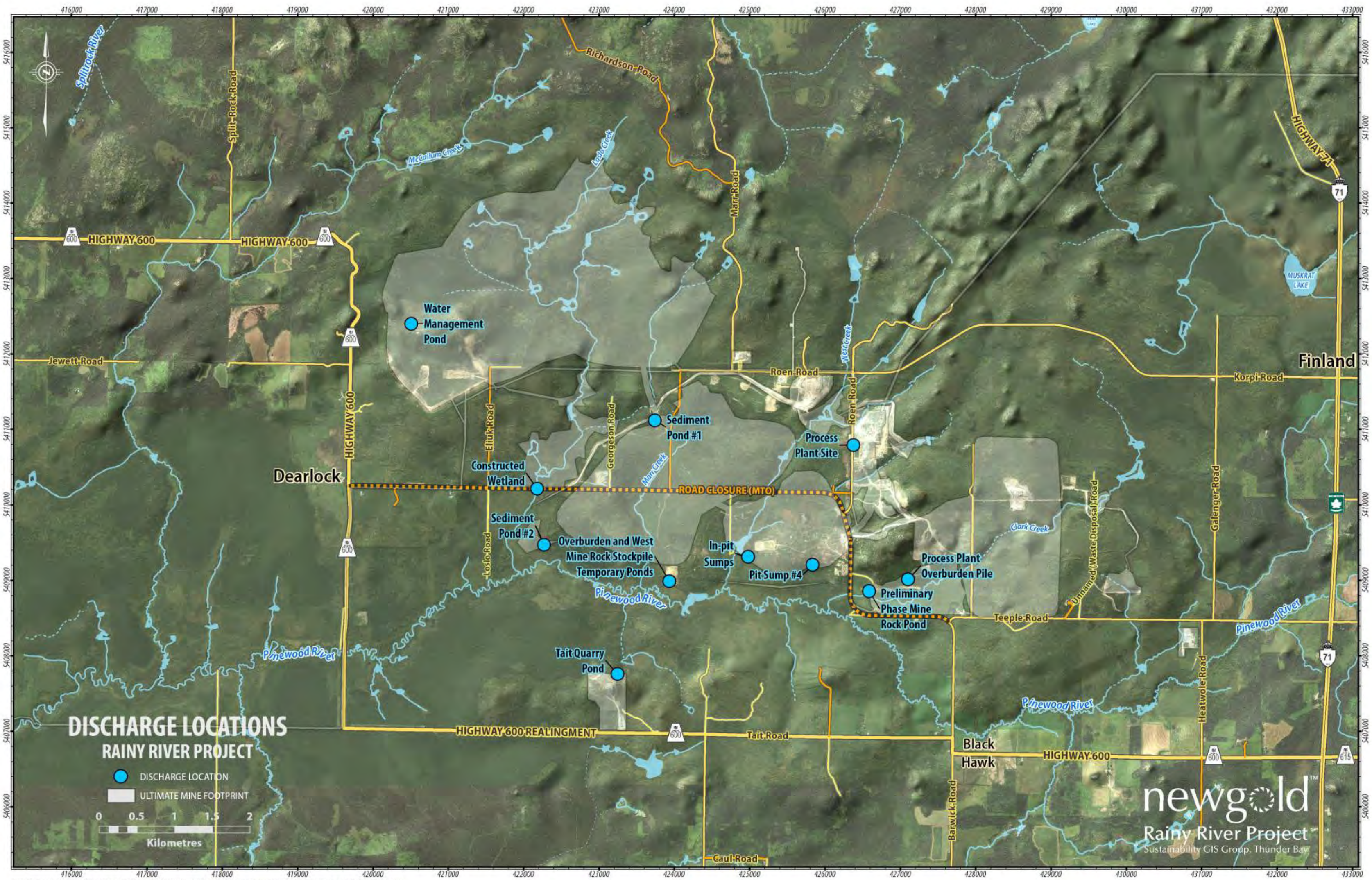
Gagne Rd.
Gouliquer Rd.
Morrison Rd.
PINEWOOD
Rainy River
SW15
EMO
Emo Rd.
Howse Rd.
SW16
Wood
HIGHWAY 11
Worthington 3 Rd.
Worthington 4 Rd.
Colonization Rd.
SW17
Minahico
Caliper Lake
Harris Hill
Bergland
Burditt Lake
Storkson's Corner
Arbor Vitae
North Branch
Manomin
Gameland
Finland
Off Lake Corner
SLEEMAN
Shenston
Barnhart
STRATTON
BARWICK
Dermid
Aylsworth
SURFACE WATER SAMPLING LOCATIONS
Surface Water Sampling Location
Mine Footprint
Kilometers
newgold Rainy River Project
Sustainability GIS Group, Thunder Bay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Tait Road
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Pinewood River
newgold Rainy River Project
Sustainability GIS Group, Thunder Bay

newgold™ Rainy River Project

February 2nd 2017

Adam Scheepers, Fishery Inspector
Environmental Enforcement Directorate
Enforcement Branch – Ontario Region
Environment Canada
335 River Rd
Ottawa, Ontario K1V 1C7
Canada

Ray Boivin, Senior Environmental Officer
Ministry of the Environment
and Climate Change
808 Robertson St.
Kenora, Ontario P9N 1X9
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Dear Mr. Scheepers and Mr. Boivin,

RE: Exceedance of MMER Rainbow Trout Acute Toxicity (SAC Ref#7425-AHBTWL)

Further to the letters provided on Jan 6th and 20th 2017, regarding an exceedance of water quality in acute lethality, and causation analysis, the following report is being submitted to Environment Canada.

Analyses and Results

Though the sample for the second (2) acute lethality analysis was frozen in transit, making the result invalid, the analysis was completed. There were no mortalities in rainbow trout or daphnia magna.

A third (3) sample for acute lethality was taken when notification of the frozen sample was received on 14th Jan 2017. Sample 3 was sent to the lab regularly used and the acute lethality analysis was completed; no mortalities in rainbow trout or daphnia magna were found. The field parameters (temperature, pH, conductivity, dissolved oxygen, and turbidity with unionized ammonia being calculated) were taken and were within regular operating levels and below regulatory limits.

A Toxicity Identification Evaluation (TIE) test was set up to run in the event that either the second (2) or third (3) acute lethality analysis found mortalities. As there were no mortalities from neither the second nor third acute lethality analysis, a TIE test could not be completed.

Based on the findings of acute toxicity analyses, the field analyses and the normal pre-discharge testing (including metals), the water in Sump 4 was within the New Gold Rainy River Project discharge limits and it has been discharged.

Causation Analysis

At this time, we cannot confirm the cause of the initial failed acute toxicity analysis as we have been unable to duplicate the results. Previous acute toxicity analyses have shown no indication of issue and have been within the discharge limits.

New Gold Inc., Rainy River Project
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The New Gold Rainy River Project will continue with the increased frequency requirements for acute toxicity testing as prescribed in the Metal Mining Effluent Regulations adjusted to the frequency of Sump 4 discharge. Please note under the current operating conditions Sump 4 is discharged approximately once per month.

Conclusion

To eliminate the possibility of the Baker Ammonia Treatment Unit being the cause of the failed acute toxicity analysis, prior to the next discharge of treated Baker Unit water, an acute toxicity analysis will be run and enough water to run a TIE test will be stored. Should the acute toxicity analysis fail, you will be provided with notification and another causation analysis will be conducted.

If you have any questions regarding this report of the completion of the causation analysis, please contact the undersigned or Darrell Martindale (Environment Department Manager) at darrell.martindale@newgold.com.

Kind Regards,

Robyn Gaebel, P.Eng
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