

STATE OF
COLORADO

Russell - DNR, Elliott <elliott.russell@state.co.us>

June Inspection Follow-Up

Clara Steward <Clara.Steward@newmont.com>

Thu, Jul 20, 2017 at 6:55 AM

To: "elliott.russell@state.co.us" <elliott.russell@state.co.us>

Cc: Meg Burt <Margaret.Burt@newmont.com>

Hi Elliot,

Please see the following update on the items of concern we discussed in the June Inspection Close-Out Meeting:

1. The Edge of Liner signs have been posted in the requested location. See JPG's 100_0178 and 100_0176.
2. The sampling program approved in TR 82 and TR 83 was overlooked in Q1. Q2 samples have been taken, results have not been received yet.
3. The large number of 55-gallon barrels that were observed at the High Grade Mill Satellite Warehouse was due to overstocking during the HGM start-up. The work that was observed on the day of the June inspection was a project to clean-up the oil storage area in order to ship off-site the majority of the oil and barrels which were un-opened oil drums (IMG 0105). Going forward, the HGM Satellite Warehouse will be used to store roughly ten 55-gallon barrels. The oil barrels that are in use and open will be stored on secondary containment pallets (IMG 0191).
4. The oil barrels found in the Projects laydown area inside the shipping containers will be included in the disposal plan described above.
5. Newmont is currently reviewing the way the Washbay Evap Pond material is being handled. Pending results from the sampling program conducted in July 2017, a plan will be put together and can be reviewed at subsequent monthly DRMS inspections.
6. Please see the attached Memo regarding CC&V's investigation into the identified seep at the toe of ECOSA.

If you have any further questions let me know!

Thanks,

Clara

=====

The content of this message may contain the private views and opinions of the sender and does not constitute a formal view and/or opinion of the company unless specifically stated.

The contents of this email and any attachments may contain confidential and/or proprietary information, and is intended only for the person/entity to whom it was originally addressed. Any dissemination, distribution or copying of this communication is strictly prohibited.

If you have received this email in error please notify the sender immediately by return e-mail and delete this message and any attachments from your system.

=====

5 attachments



100_0178.jpg
328K



100_0176.jpg
2505K



IMG_0105.jpg
1001K



IMG_0191.jpg
174K



ECOSA SEEP 2 MEMO.doc
6339K



DO NOT
DISTURB
BURIED LINER

DO NOT
DISTURB
BURIED LINER

DO NOT
DISTURB
BURIED LINER

DO NOT
DISTURB
BURIED LINER

07/18/2017



07/18/2017





Tech Memo

Date: 7/20/2017

To: Elliott Russell

CC: Meg Burt; Clara Steward

From: Ronald Parratt

Subject: 2017 SE ECOSA Seep

During the June 2017 DRMS inspection, the inspector observed water on the south-southeast side of the East Cresson Overburden Storage Area (ECOSA) between the toe berm containing the facility, and the facility itself (Photo 1.). Subsequently on June 21, 2017 the location of the observed water was inspected by CC&V site personnel and water samples collected. From this inspection it was determined that the water at this location is likely being generated from a seep at the contact between the native ground and the placed overburden.

The seep observed on the south-southeast side of the ECOSA facility between the toe berm and the facility is likely meteoric water which has infiltrated into the waste rock facility and is re-emerging to the surface at this location. Elevation differences between the seep observed in 2016 (the result of the pipeline failure) and the seep identified in June of 2017 demonstrate that the sources of water between the two seeps are distinct. Figure 1 depicts the locations of the 2016 pipeline failure seep, and the seep identified in June of 2017. The seep is entirely contained within the ECOSA toe berm and is evident only between the North and South areas identified on Figure 1. The seep water was not observed past this location and is believed to seep into the ground. The flow of the water is too low to effectively obtain a flow measurement.

The water quality data obtained from water samples collected from the seep identified in June 2017 and storm water features ECOSA Toe Road BMP 12 & ECOSA Toe Road BMP-15 are presented in the attached analysis report from Mid-Continent Testing Laboratories, INC. and selected parameters are presented in the table below (Table 1). Demonstrated within the table below is the difference in water quality parameters between the two locations. From this it is evident that the water sampled from the ECOSA facility is distinct from the water contained within the ECOSA Toe Road BMP features.

In conclusion, an ephemeral seep has been observed on the ECOSA. It is located entirely on the diatreme and requires no active management at this time. The seep is being actively monitored to ensure the conditions do not change and there is no discharge from the immediate area.



Photo 1. Seep identified at toe of ECOSA 15 June 2017. Photo looking northeast at south-southeast side of the ECOSA.

Table 1 Selected water chemistry comparison

Sample ID	ECOSA SSE	ETR-BMP-15	ETA-BMP-12
Date Sampled	6/21/2017	6/20/2017	6/27/2017
pH	3.45	7.09	7.76
Hardness (mg/L)	6310	81.8	22
TDS (mg/L)	17700	248	64
Cyanide (WAD) (mg/L)	< 0.10	< 0.10	< 0.10
Sulfate (mg/L)	11900	75.8	< 10.0
Aluminum (mg/L)	961	0.206	0.04
Arsenic (mg/L)	0.027	< 0.005	< 0.005
Cadmium (mg/L)	2.55	< 0.001	0.001
Chromium (mg/L)	0.006	< 0.001	< 0.001
Copper (mg/L)	0.407	< 0.005	< 0.005
Iron (mg/L)	2.48	0.103	< 0.050
Lead (mg/L)	0.002	< 0.001	< 0.001
Manganese (mg/L)	565	0.011	0.3
Mercury (mg/L)	<0.0002	<0.0002	<0.0002
Nickel (mg/L)	3.46	< 0.005	0.008
Selenium (mg/L)	0.068	< 0.005	< 0.005
Silver (mg/L)	<0.001	< 0.001	< 0.001
Zinc (mg/L)	80.1	< 0.050	< 0.050

**2016 & 2017
Identified ECOSA Seep Locations**

Author: R. Parratt

Date: 07/2017

1 inch = 137 feet

Figure 1

File: ecosa_seep_2

2016 Pipeline Seep Location



2017 Seep Location North



2017 Seep Location South



0 65 130 260 390 520 Feet



2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
(605) 348-0111 -- www.thechemistrylab.com

Sample Site: ECOSA SSE
Sampled: 06/21/17 at 07:15 AM
by Tyler O'Donnell
Sample Matrix: Water

Lab ID#: 20170627107
Received: 06/26/17 at 10:15 AM
by Tanya Nelsen
Account: W1123 - Cripple Creek / Victor Gold

RON PARRATT
CRIPPLE CREEK/VICTOR GOLD
PO BOX 191
VICTOR, CO 80860

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date	
Physical Properties								
Electrical Conductivity	10400	µmhos/cm	1	0.470	5.00	SM 2510B	JAM	06/27/17
Hardness	6310	mg/L	1			SM 2340 B	GAM	06/29/17
pH	3.45	S.U.	1			SM 4500-H+ B	JAM	06/27/17
Total Dissolved Solids	17700	mg/L	100ml	18.1	50.0	SM 2540 C	ELR	06/27/17
Total Suspended Solids	322	mg/L	100ml	3.36	10.0	SM 2540 D	ELR	06/27/17
Non-Metallics								
Acidity (CaCO3)	5810	mg/L	1	3.37	10.0	SM 2310 B	BAA	06/27/17
Alkalinity (CaCO3)	0.00	mg/L	1	0.506	10.0	SM 2320 B	JAM	06/27/17
Bicarbonate	0.00	mg/L	1	0.618	10.0	SM 2320 B	JAM	06/27/17
Carbonate	0.00	mg/L	1	0.253	5.00	SM 2320 B	JAM	06/27/17
Chloride (Cl-)	5.57	mg/L	1	0.214	0.500	SM 4500-Cl E	GRT	06/27/17
Cyanide, Total	< 0.010	mg/L	1	0.00052	0.010	Kelada 01	TMN	06/27/17
Cyanide, WAD	< 0.010	mg/L	1	0.0007	0.010	Kelada 01	TMN	06/27/17
Cyanide, Free	< 0.010	mg/L	1	0.006	0.020	116-D588-01	TMN	06/27/17
Fluoride	0.202	mg/L	1	0.003	0.050	SM 4500 F-C	BAA	06/28/17
Nitrogen, Ammonia (NH3)	0.634	mg/L	1	0.003	0.050	SM 4500-NH3 D	JAM	06/28/17
Nitrogen, Nitrate (NO3)	9.41	mg/L	1	0.008	0.050	SM 4500-NO3 F	GRT	06/27/17
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.008	0.050	SM 4500-NO2 B	GRT	06/29/17
Sulfate (SO4)	11900	mg/L	400	212	400	SM 4500-SO4 E	GRT	06/29/17
Metals - Dissolved								
Aluminum (Al)	961	mg/L	10000	2.40	10.0	EPA 200.8	TNA	06/27/17
Arsenic (As)	0.027	mg/L	10	0.00047	0.005	EPA 200.8	TNA	06/27/17
Cadmium (Cd)	2.55	mg/L	100	0.00025	0.010	EPA 200.8	TNA	06/27/17
Chromium (Cr)	0.006	mg/L	10	0.000025	0.001	EPA 200.8 DRC	TNA	06/27/17
Copper (Cu)	0.407	mg/L	10	0.00016	0.005	EPA 200.8	TNA	06/27/17
Iron (Fe)	2.48	mg/L	10	0.002	0.050	EPA 200.8	TNA	06/27/17
Lead (Pb)	0.002	mg/L	10	0.000024	0.001	EPA 200.8	TNA	06/27/17
Manganese (Mn)	565	mg/L	10000	0.058	10.0	EPA 200.8	TNA	06/27/17

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date	
<u>Metals - Dissolved</u>								
Mercury (Hg)	< 0.0002	mg/L	1	0.000035	0.0002	EPA 245.1	TMS	06/27/17
Nickel (Ni)	3.46	mg/L	100	0.003	0.050	EPA 200.8	TNA	06/27/17
Selenium (Se)	0.068	mg/L	10	0.001	0.005	EPA 200.8	TNA	06/27/17
Silver (Ag)	< 0.001	mg/L	10	0.00014	0.001	EPA 200.8	TNA	06/27/17
Zinc (Zn)	80.1	mg/L	10000	2.35	50.0	EPA 200.8	TNA	06/27/17
<u>Metals - Total</u>								
Calcium (Ca)	585	mg/L	17	0.530	17.0	SM 3111 B	TMS	06/27/17
Magnesium (Mg)	1180	mg/L	45	1.84	22.5	SM 3111 B	TMS	06/27/17
Mercury (Hg)	< 0.0002	mg/L	1	0.000035	0.0002	EPA 245.1	TMS	06/27/17
Potassium (K)	19.2	mg/L	3	0.060	1.50	SM 3111 B	TMS	06/27/17
Sodium (Na)	98.0	mg/L	3	0.158	1.50	SM 3111 B	TMS	06/27/17
<u>Anion - Cation Balance</u>								
Anions	254	meq/L	1			Calculation	GAM	06/29/17
Anion - Cation Balance	-1.21	%	1			Calculation	GAM	06/29/17
Cations	248	meq/L	1			Calculation	GAM	06/29/17

Report Approved By:



Report Approved On: 6/29/2017 4:34:33 PM



2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
(605) 348-0111 -- www.thechemistrylab.com

Sample Site: **ETR-BMP-12**
Sampled: 06/27/17 at 06:55 AM
by Ronald Parratt
Sample Matrix: Water

Lab ID#: 20170630107
Received: 06/29/17 at 09:50 AM
by Tanya Nelsen
Account: W1123 - Cripple Creek / Victor Gold

RON PARRATT
CRIPPLE CREEK/VICTOR GOLD
PO BOX 191
VICTOR, CO 80860

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date	
Physical Properties								
Electrical Conductivity	124	µmhos/cm	1	0.470	5.00	SM 2510B	JAM	06/29/17
Hardness	22.0	mg/L	1			SM 2340 B	GAM	07/03/17
pH	7.76	S.U.	1			SM 4500-H+ B	JAM	06/30/17
Total Dissolved Solids	64.0	mg/L	100ml	18.1	50.0	SM 2540 C	ELR	06/30/17
Total Suspended Solids	< 10.0	mg/L	100ml	3.36	10.0	SM 2540 D	ELR	06/30/17
Non-Metallics								
Acidity (CaCO3)	< 10.0	mg/L	1	3.37	10.0	SM 2310 B	BAA	06/30/17
Alkalinity (CaCO3)	46.6	mg/L	1	0.506	10.0	SM 2320 B	JAM	06/30/17
Bicarbonate	56.8	mg/L	1	0.618	10.0	SM 2320 B	JAM	06/30/17
Carbonate	0.00	mg/L	1	0.253	5.00	SM 2320 B	JAM	06/30/17
Chloride (Cl-)	3.61	mg/L	1	0.214	0.500	SM 4500-Cl E	GRT	06/30/17
Cyanide, Total	< 0.010	mg/L	1	0.00052	0.010	Kelada 01	TMN	06/30/17
Cyanide, WAD	< 0.010	mg/L	1	0.0007	0.010	Kelada 01	TMN	06/30/17
Cyanide, Free	< 0.010	mg/L	1	0.006	0.020	116-D588-01	TMN	06/30/17
Fluoride	1.91	mg/L	1	0.003	0.050	SM 4500 F-C	BAA	06/30/17
Nitrogen, Ammonia (NH3)	< 0.050	mg/L	1	0.003	0.050	SM 4500-NH3 D	JAM	06/30/17
Nitrogen, Nitrate (NO3)	0.631	mg/L	1	0.008	0.050	SM 4500-NO3 F	GRT	06/29/17
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.008	0.050	SM 4500-NO2 B	GRT	07/01/17
Sulfate (SO4)	< 10.0	mg/L	1	0.531	1.00	SM 4500-SO4 E	GRT	06/30/17
Metals - Dissolved								
Aluminum (Al)	0.040	mg/L	10	0.002	0.010	EPA 200.8	TNA	06/30/17
Arsenic (As)	< 0.005	mg/L	10	0.00047	0.005	EPA 200.8	TNA	06/30/17
Cadmium (Cd)	0.001	mg/L	10	0.000025	0.001	EPA 200.8	TNA	06/30/17
Chromium (Cr)	< 0.001	mg/L	10	0.000025	0.001	EPA 200.8 DRC	TNA	06/30/17
Copper (Cu)	< 0.005	mg/L	10	0.00016	0.005	EPA 200.8	TNA	06/30/17
Iron (Fe)	< 0.050	mg/L	10	0.002	0.050	EPA 200.8	TNA	06/30/17
Lead (Pb)	< 0.001	mg/L	10	0.000024	0.001	EPA 200.8	TNA	06/30/17
Manganese (Mn)	0.300	mg/L	10	0.000058	0.010	EPA 200.8	TNA	06/30/17

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date	
<u>Metals - Dissolved</u>								
Mercury (Hg)	< 0.0002	mg/L	1	0.000035	0.0002	EPA 245.1	TMS	07/03/17
Nickel (Ni)	0.008	mg/L	10	0.00029	0.005	EPA 200.8	TNA	06/30/17
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA	06/30/17
Silver (Ag)	< 0.001	mg/L	10	0.00014	0.001	EPA 200.8	TNA	06/30/17
Zinc (Zn)	< 0.050	mg/L	10	0.002	0.050	EPA 200.8	TNA	06/30/17
<u>Metals - Total</u>								
Calcium (Ca)	6.54	mg/L	1	0.031	1.00	SM 3111 B	TMS	07/03/17
Magnesium (Mg)	1.38	mg/L	1	0.041	0.500	SM 3111 B	TMS	07/03/17
Mercury (Hg)	< 0.0002	mg/L	1	0.000035	0.0002	EPA 245.1	TMS	07/03/17
Potassium (K)	0.850	mg/L	1	0.020	0.500	SM 3111 B	TMS	07/03/17
Sodium (Na)	18.0	mg/L	1	0.053	0.500	SM 3111 B	TMS	07/03/17
<u>Anion - Cation Balance</u>								
Anions	1.28	meq/L	1			Calculation	GAM	07/03/17
Anion - Cation Balance	-1.01	%	1			Calculation	GAM	07/03/17
Cations	1.26	meq/L	1			Calculation	GAM	07/03/17

Report Approved By:



Report Approved On: 7/3/2017 1:48:31 PM



2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
(605) 348-0111 -- www.thechemistrylab.com

Sample Site: ETR-BMP-12
Sampled: 06/20/17 at 02:00 PM
by Tyler O'Donnell
Sample Matrix: Water

Lab ID#: 20170627101
Received: 06/26/17 at 10:15 AM
by Tanya Nelsen
Account: W1123 - Cripple Creek / Victor Gold

RON PARRATT
CRIPPLE CREEK/VICTOR GOLD
PO BOX 191
VICTOR, CO 80860

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	213	µmhos/cm	1	0.470	5.00	SM 2510B	JAM 06/27/17
Hardness	81.8	mg/L	1			SM 2340 B	GAM 06/29/17
pH	7.09	S.U.	1			SM 4500-H+ B	JAM 06/27/17
Total Dissolved Solids	248	mg/L	100ml	18.1	50.0	SM 2540 C	ELR 06/27/17
Total Suspended Solids	27.0	mg/L	100ml	3.36	10.0	SM 2540 D	ELR 06/27/17
Non-Metallics							
Acidity (CaCO ₃)	< 10.0	mg/L	1	3.37	10.0	SM 2310 B	BAA 06/27/17
Alkalinity (CaCO ₃)	14.6	mg/L	1	0.506	10.0	SM 2320 B	JAM 06/27/17
Bicarbonate	17.9	mg/L	1	0.618	10.0	SM 2320 B	JAM 06/27/17
Carbonate	0.00	mg/L	1	0.253	5.00	SM 2320 B	JAM 06/27/17
Chloride (Cl ⁻)	8.76	mg/L	1	0.214	0.500	SM 4500-Cl E	GRT 06/27/17
Cyanide, Total	< 0.010	mg/L	1	0.00052	0.010	Kelada 01	TMN 06/27/17
Cyanide, WAD	< 0.010	mg/L	1	0.0007	0.010	Kelada 01	TMN 06/27/17
Cyanide, Free	< 0.010	mg/L	1	0.006	0.020	116-D588-01	TMN 06/27/17
Fluoride	0.346	mg/L	1	0.003	0.050	SM 4500 F-C	BAA 06/28/17
Nitrogen, Ammonia (NH ₃)	< 0.050	mg/L	1	0.003	0.050	SM 4500-NH ₃ D	JAM 06/27/17
Nitrogen, Nitrate (NO ₃)	< 0.050	mg/L	1	0.008	0.050	SM 4500-NO ₃ F	GRT 06/27/17
Nitrogen, Nitrite (NO ₂)	< 0.050	mg/L	1	0.008	0.050	SM 4500-NO ₂ B	GRT 06/27/17
Sulfate (SO ₄)	75.8	mg/L	1	0.531	1.00	SM 4500-SO ₄ E	GRT 06/27/17
Metals - Dissolved							
Aluminum (Al)	0.206	mg/L	10	0.002	0.010	EPA 200.8	TNA 06/27/17
Arsenic (As)	< 0.005	mg/L	10	0.00047	0.005	EPA 200.8	TNA 06/27/17
Cadmium (Cd)	< 0.001	mg/L	10	0.000025	0.001	EPA 200.8	TNA 06/27/17
Chromium (Cr)	< 0.001	mg/L	10	0.000025	0.001	EPA 200.8 DRC	TNA 06/27/17
Copper (Cu)	< 0.005	mg/L	10	0.00016	0.005	EPA 200.8	TNA 06/27/17
Iron (Fe)	0.103	mg/L	10	0.002	0.050	EPA 200.8	TNA 06/27/17
Lead (Pb)	< 0.001	mg/L	10	0.000024	0.001	EPA 200.8	TNA 06/27/17
Manganese (Mn)	0.011	mg/L	10	0.000058	0.010	EPA 200.8	TNA 06/27/17

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date	
<u>Metals - Dissolved</u>								
Mercury (Hg)	< 0.0002	mg/L	1	0.000035	0.0002	EPA 245.1	TMS	06/27/17
Nickel (Ni)	< 0.005	mg/L	10	0.00029	0.005	EPA 200.8	TNA	06/27/17
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA	06/27/17
Silver (Ag)	< 0.001	mg/L	10	0.00014	0.001	EPA 200.8	TNA	06/27/17
Zinc (Zn)	< 0.050	mg/L	10	0.002	0.050	EPA 200.8	TNA	06/27/17
<u>Metals - Total</u>								
Calcium (Ca)	20.1	mg/L	1	0.031	1.00	SM 3111 B	TMS	06/27/17
Magnesium (Mg)	7.69	mg/L	1	0.041	0.500	SM 3111 B	TMS	06/27/17
Mercury (Hg)	< 0.0002	mg/L	1	0.000035	0.0002	EPA 245.1	TMS	06/27/17
Potassium (K)	3.18	mg/L	1	0.020	0.500	SM 3111 B	TMS	06/27/17
Sodium (Na)	9.81	mg/L	1	0.053	0.500	SM 3111 B	TMS	06/27/17
<u>Anion - Cation Balance</u>								
Anions	2.14	meq/L	1			Calculation	GAM	06/29/17
Anion - Cation Balance	0.157	%	1			Calculation	GAM	06/29/17
Cations	2.14	meq/L	1			Calculation	GAM	06/29/17

Report Approved By:



Report Approved On: 6/29/2017 2:59:46 PM