

Annual Reporting, Monitoring, and Notifications

12.a.(1) - Cargill Cayuga Mine Manager Certification:

I, Shawn G. Wilczynski, Mine Manager – Cargill Deicing Technology, certify that all mining activities, to the best of my knowledge, conducted during the reporting period from November 1, 2014 to present were in conformance with the DEC Permit # 0-9999-00075/00001 and the approved plans. No variances occurred and none were reported.

Signed: Shawn G. Wilczynski Date: 12/2/15

12.a.(2) - Summary of all non-routine mining incidents:

The Cayuga Mine is not aware of any non-routine incidents associated with the mining, processing, or other mine related activities that would have adversely affected any of the following;

- Mine stability
- Ground and surface water
- Natural resources
- Health, safety, welfare or property of the general public

12.a.(3) - 3 Year Mining Plan

A map is attached depicting the current and proposed mining for the next three years.

The Cayuga Mine is currently operating in the northern region of the mine. Active mining is located in panels U-63E to the east under the land, U-74 and U-76 to the west, and NW-3 to the northwest.

12.a.(4) - Summary of In-situ Measurements of Rock Mechanics:

The Cayuga Mine continues to collect mine convergence data in accordance with the guidelines previously established in the Mined Land Use Plan. Convergence stations are typically installed at the "face" of active tunnels in mining panels with a profile of three stations located in the center and edges of the panel. The convergence stations are usually read daily during the first week and then shifted to a weekly schedule until the next profile is installed. The initial profile will then be monitored on a monthly or quarterly schedule for the duration of mining of the panel. After abandonment of the panel, specific convergence stations are monitored quarterly. Currently, there are over 300 convergence stations being monitored. Once the data from the convergence stations has been collected it is evaluated both internally and externally for trends to ensure that each panel and the mine are behaving properly.

Evaluations of weekly and quarterly convergence data indicate that no unusual trends have been identified and the mine is behaving as expected, with the exception of the U-40B and U12 areas. Since backfill placement in the U40B area has been completed the convergence rates have slowed and are trending back toward historical rates. The U-12 panel also shows higher than normal closure near the breakthrough with SW-2 and near the U-12A sub-panel. These areas are being monitored more frequently as we try to understand why the rates are increased. Both of these areas in U-12 were backfilled during the 1990's and both areas show a decreasing rate trend at this time.

Roof sag and wall expansion, measured with extensometers, is also monitored as conditions warrant. This data is reviewed internally and externally as well. This data indicates the mine is behaving as expected.

The Cayuga Mine operates a micro-seismic monitoring network which now has over 104 channels and covers over 5 square miles of mine workings. The data from this system is reviewed daily in-house and by Engineering Seismology Group (ESG), and is summarized in a monthly report by ESG. This data indicates the mine is behaving as expected.

12.a.(5) - Summary of Subsidence Monitoring:

Surface subsidence measurements continue to be performed in accordance with the Mined Land Use Plan. Subsidence surveys of the surface were completed during the year. The measurements indicate that the mine is behaving as expected with no anomalous subsidence zones.

12.a.(6) Source and Volume of Water Inflow Into the Mine and Disposition of Such Water:

The following is a list of sources and associated flow rates of water into the Cayuga Mine:

- Production Shaft (#1 shaft) – 20 gallons per minute (gpm), down from 30 gpm reported last year
- Ventilation Shaft (#2 shaft) – 10 gpm
- ED Plant Concentrate discharge – 4 gpm

- Total Water Inflow = 34 gpm

All of the water is directed to a settling pond located on the 4-level of the mine. The water is then pumped from the settling pond to abandoned areas at the far east end of 4-level as well as to various areas of the active mine for dust control. Recent volume calculations indicated that at our current rate of storage (about 18,000,000 gallons per year) we have approximately 6.5 years of storage life remaining on 4-level.

Action plans are in place to continue to reduce the inflow into the mine. A system for collecting the #1 shaft water inflow and for pumping it to surface for processing has been installed and is being optimized now. Once the processing system is optimized it is expected to reduce inflow by an additional 3 gpm (~1,500,000 gpy). A new sump monitoring system has been installed at the “lower” salt storage pad which diverts water to the ED plant system only when it exceeds NYS PDES allowable limits. This has reduced the volume of water that is processed at the ED plant.

During late August, grouting in the #1 shaft was completed achieving a reduction of inflow of 10 gpm. This reduces the volume of water to be stored by about 5,300,000 gallons per year. Investigations are under way to determine how to reduce the inflows at the #2 shaft and plans are being made for further grouting of the #1 shaft during the summer of 2016.

12.a.(7) - Summary of SPDES Monitoring Data:

There were four exceedances of the SPDES limits for the stormwater outfalls, and zero exceedances for the Waste Water Treatment Plant to report during the past year. The data is included here as an attached spreadsheet. If an exceedance occurs it is reported to the DEC in two ways. Once an exceedance has been identified the DEC is informed via telephone of the occurrence. Each event is also captured in the monthly Report of Non-Compliance, which also lists corrective action taken. The Reports of Exceedance for the four events are attached.

12.b - Notification of Non-routine Mining Incidents:

There were no incidents meeting the guidelines for notification as identified in section 12.a.(2).

12.c - MSHA Correspondence Involving Non-routine Mining Incidents:

The Cayuga Mine has not received any citations or correspondence from MSHA regarding non-routine mining incidents as identified in section 12.a.(2).

12.d. - Changes in Mining Method:

There have been no changes to the Cayuga Mine layout in the past year, with the exception of an experiment to mine a small test panel on the #5 level above the #6 level workings. Several reports and letters of explanation have been previously sent to both the DEC and Dr. Scovazzo of John T. Boyd Company. That experiment will be conducted between December of 2015 and May of 2016.

12.e. - Surface Subsidence:

Surface subsidence surveys continue to be done in accordance with the Mined Land Use Plan. See section 12.a.(5) of this report.

12.f. - In-situ Rock Mechanics Measurements:

See section 12.a.(4) of this report.

12.g. - Written Citizen Complaints:

No written complaints from citizens were received since the last report (November 2014).

2015 DEC Report Outfall Results (Nov 2014 through Oct 2015)

Red = exceedance

CYANIDE									
Acid Disociable	001	002	003	004	005	006	007	008	012
Permit Limit	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Month/Year				Eliminated	Eliminated			Eliminated	
November	0.68	<0.01	<0.01			NF	<0.01		<0.01
December 2014	0.19	<0.01	<0.01			0.01	<0.01		0.12
January 2015	0.06	<0.01	<0.01			NF	NF		NF
February	0.21	<0.01	<0.01			NF	NF		NF
March	0.04	<0.01	<0.01			<0.01	<0.01		<0.01
April	0.02	<0.01	<0.01			<0.01	<0.01		<0.01
May	0.05	0.54	<0.01			NF	<0.01		<0.01
June	0.16	<0.01	<0.01			NF	<0.01		<0.01
July	0.14	<0.01	<0.01			<0.01	<0.01		<0.01
August	0.14	<0.01	<0.01			NF	<0.01		<0.01
September	0.43	<0.01	<0.01			NF	<0.01		NF
October	0.13	<0.01	<0.01			<0.01	<0.01		<0.01

CHLORIDE									
	001	002	003	004	005	006	007	008	012
Permit Limit	40,000 mg/l	10,000 mg/l	10,000 mg/l			5,000 mg/l	5,000 mg/l		5,000 mg/l
Month/Year				Eliminated	Eliminated			Eliminated	
November	28,000	1,700	760			NF	690		5,000
December 2014	18,000	1,900	1,300			9,800	730		4,650
January 2015	17,000	1,900	2,300			NF	NF		NF
February	61,000	20,466	18,000			NF	NF		NF
March	11,000	3,700	2,200			2,500	2,747		790
April	9,500	2,100	1,100			4,200	405		1,400
May	13,000	5,600	890			NF	310		2,000
June	25,000	740	850			NF	470		3600
July	22,000	1,400	1,000			2,700	350		1,200
August	30,000	5,400	950			NF	740		3,100
September	32,000	2,900	880			NF	1,300		NF
October	27,000	2,600	1,000			2,100	460		2,800

TDS									
	001	002	003	004	005	006	007	008	012
Permit Limit	80,000 mg/l	40,000 mg/l	40,000 mg/l			10,000 mg/l	10,000 mg/l		10,000 mg/l
Month/Year				Eliminated	Eliminated			Eliminated	
November	45,000	2,900	1,900			NF	1,600		8,000
December 2014	30,000	3,400	2,800			16,000	1,600		6,150
January 2015	27,000	3,000	2,300			NF	NF		NF
February	86,000	25,000	28,000			NF	NF		NF
March	19,000	6,200	4,500			4,400	10,000		1,400
April	16,000	3,700	2,600			7,100	920		2,600
May	23,000	9,533	2,700			NF	1,100		4,000
June	42,000	1,600	2,500			NF	1,400		7,000
July	34,000	2,800	2,600			4,600	990		2,400
August	47,000	9,200	2,800			NF	1,600		5,500
September	53,000	5,000	2,500			NF	2,700		NF
October	43,000	4,800	2,600			3,900	1,200		5,100

ZINC

OUTFALL

Permit Limit	Month/Year
001	20 mg/l
0.2	November
0.2	December 2014
0.2	January 2015
0.2	February
0.1	March
0.2	April
0.2	May
0.2	June
0.2	July
0.6	August
0.2	September
0.2	October

NON CONTACT COOLING WATER

Outfall #014

Permit Limit Min/Max
 Intake Water Temp. deg. F.
 Effluent Water Temp. deg. F.
 500 Max Gpm. Flow Rate
 Effluent Gross

Month/Year			
November	49.3/63.6	48.6/64.9	137
December 2014	42.6/59.9	43.1/60.8	288
January 2015	38.1/55.55	38.1/61.3	116
February	30/48.8	30.9/52.9	126
March	30/50.6	30.9/59.6	276
April	36.3/60.1	46./64.5	169
May	41/54	50/55	306
June	51.2/67.5	53./68.7	316
July	66.2/71.9	68.1/72	298
August	69.9/74.8	71.2/74.9	295
September	72.5/73.1	70.1/73.2	290
October	58.5/65.1	58.7/65.1	294

WASTE WATER TREATMENT PLANT

Outfall #009

Item	Flow Rate	BOD	pH	Total Suspended Solids	Settleable Solids	Total Residual Chlorine	Fecal Coliform # per 100 ml	Permit Limit	Month/Year
	Gal / day	Avg 30 Day	Min	Avg 30 Day	Daily max	Max Daily Avg	Avg 30 Day	Report	Report
		Max 7 Day	Max	Max 7 Day		1.0 mg/l	Max	Report	
November	1000	28.2	6.9	8.2	9	<0.1	0.8	0	0
December 2014	1000	19.2	6.9	7.7	15	<0.1	0.8	0	0
January 2015	2279	5.4	7.0	8.2	22	<0.1	0.9	12	12
February	2279	7.5	7.4	8.3	14	<0.1	0.7	12	12
March	2279	10.8	7.6	8.3	21	<0.1	0.8	12	12
April	825	9.0	7.8	8.4	7	<0.1	0.5	12	12
May	825	7.8	8.0	8.4	13	<0.1	0.5	0	0
June	648	8.4	7.0	7.8	17	<0.1	0.5	16	16
July	1005	12.0	7.0	7.6	21	<0.1	0.5	16	16
August	1005	4.2	7.2	7.6	13	<0.1	0.8	16	16
September	1005	3.9	6.9	7.6	13	<0.1	0.5	16	16
October	703	3.0	6.6	8.3	16	<0.1	1.0	0	0

Appendix B

SECTION 1



New York State Department of Environmental Conservation
Division of Water



Report of Noncompliance Event

To: DEC Water Contact John Marra DEC Region: 7

Report Type: 5 Day ☒ Permit Violation ☐ Order Violation ☐ Anticipated Noncompliance ☐ Bypass/Overflow ☐ Other

SECTION 2

SPDES #: NY-0101290 Facility: Cargill Inc. - Cayuga Mine

Date of noncompliance: 12 / 4 / 14 Location (Outfall, Treatment Unit, or Pump Station): Outfall #6

Description of noncompliance(s) and cause(s): Our 750-ton salt storage bin roof collapsed, causing us to cease production. In order to
Continue to run we began live loading trucks out of our hoist headframe. Loading trucks in this location caused salt dust to accumulate in the
area. The salt dust was washed away with rain via outfall #6.

Has event ceased? ☒ (Yes) (No) If so, when? 12/22/14 Was event due to plant upset? ☒ (Yes) (No) SPDES limits violated? ☒ (Yes) (No)

Start date, time of event: 11 / 17 / 14, 7 :00 ☒ (AM) ☒ (PM) End date, time of event: 12 / 22 / 14, 7 :00 ☒ (AM) ☒ (PM) Date,
time oral notification made to DEC? / N/A /, : (AM) (PM) DEC Official contacted: N/A Immediate

corrective actions: Once the December lab results were received from Life Sciences Laboratories we saw we were in exceedence of our total
dissolved solids and chlorides limits. At that point in time we were able to resume normal operations utilizing our 750-ton salt bin, eliminating
the exposure.

Preventive (long term) corrective actions: In the future we will avoid live loading trucks out of the hoist headframe if possible. Otherwise
we will use alternative measures to control the salt dust and limit the exposure.

SECTION 3

Complete this section if event was a bypass:

Bypass amount: _____ Was prior DEC authorization received for this event? (Yes) (No)

DEC Official contacted: _____ Date of DEC approval: _____ / _____ / _____

Describe event in "Description of noncompliance and cause" area in Section 2. Detail the start and end dates and times in Section 2 also.

SECTION 4

Facility Representative: Marty Christofferson Title: EHS Professional Date: 1 / 12 / 15

Phone #: (607) 533 - 3815 Fax #: (607) 533 - 4501

I Certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

X

Signature of Principal Executive
Officer or Authorized Agent

SECTION 1



New York State Department of Environmental Conservation
Division of Water



Report of Noncompliance Event

To: DEC Water Contact John Marra DEC Region: 7

Report Type: 5 Day ☒ Permit Violation ☐ Order Violation ☐ Anticipated Noncompliance ☐ Bypass/Overflow ☐ Other

SECTION 2

SPDES #: NY-0101290 Facility: Cargill Inc. - Cayuga Mine

Date of noncompliance: 12 / 4 / 14 Location (Outfall, Treatment Unit, or Pump Station): Outfall #12

Description of noncompliance(s) and cause(s): While repairing our system which adds anti-caking agent (YPS) to our salt the wrong valve was inadvertently turned on due to a mislabeling issue. This caused an unintentional spill of YPS near a drain which leads to outfall #12.

Has event ceased? ☒ (Yes) (No) If so, when? 12/4/14 Was event due to plant upset? ☒ (Yes) (No) SPDES limits violated? ☒ (Yes) (No)

Start date, time of event: 12 / 3 / 14, 8 : 00 ☒ (AM) ☐ (PM) End date, time of event: 12 / 3 / 14, 12 : 00 ☒ (AM) ☐ (PM) Date, time oral notification made to DEC? / N/A /, : : (AM) (PM) DEC Official contacted: N/A

Immediate corrective actions: Once this issue was discovered the valve was immediately turned off, and the YPS was cleaned up.

Preventive (long term) corrective actions: The labeling of the YPS valves was corrected to prevent reoccurrence.

SECTION 3

Complete this section if event was a bypass:

Bypass amount: _____ Was prior DEC authorization received for this event? (Yes) (No)

DEC Official contacted: _____ Date of DEC approval: _____ / _____ / _____

Describe event in "Description of noncompliance and cause" area in Section 2. Detail the start and end dates and times in Section 2 also.

SECTION 4

Facility Representative: Marty Christofferson Title: EHS Professional Date: 1 / 19 / 15

Phone #: (607) 533 - 3815 Fax #: (607) 533 - 4501

I Certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

X

Signature of Principal Executive
Officer or Authorized Agent

SECTION 1



New York State Department of Environmental Conservation
Division of Water



Report of Noncompliance Event

To: DEC Water Contact John Marra DEC Region: 7

Report Type: 5 Day ☒ Permit Violation ☐ Order Violation ☐ Anticipated Noncompliance ☐ Bypass/Overflow ☐ Other

SECTION 2

SPDES #: NY-0101290 Facility: Cargill Inc. - Cayuga Mine

Date of noncompliance: 2/5/15 Location (Outfall, Treatment Unit, or Pump Station): Outfall 1, 2, 3

Description of noncompliance(s) and cause(s): Outfalls 1, 2, and 3 on the North end of our property were found to be out of compliance for chlorides in February. We believe the record cold month has contributed to the exceedence as it has been too cold for plain water to flow. With an average temperature of ~10 degrees F, only brine water would flow. An additional issue was some buildup of salt/mud near different drains. This created a blockage and affected the distribution of the flow of run-off. These both also contributed to the higher than allowed concentrations of total dissolved solids in outfall #1.

Has event ceased? (Yes) ☒ (No) ☐ If so, when? _____ Was event due to plant upset? (Yes) ☒ (No) ☐ SPDES limits violated? ☒ (Yes) (No) ☐

Start date, time of event: 2/5/2015, 7:00 (AM) (PM) End date, time of event: N/A /, (AM) (PM) Date, time

oral notification made to DEC? 2/24/15, 10:01 (AM) (PM) DEC Official contacted: Yes (Fred Gillette)

Immediate corrective actions: An investigation to determine the cause commenced. Each outfall that was out of compliance was retested twice during the month to confirm and monitor any trends. Outfall 2 tested within compliance at the end of the month while the rest of the outfalls all trended downward closer to their limits.

Preventive (long term) corrective actions: Employees examined each drain leading to the outfalls for any signs of salt buildup or other issues. Any issues were cleaned up or resolved. Going forward, employees will examine these drains regularly for any issues or buildup.

SECTION 3

Complete this section if event was a bypass:

Bypass amount: _____ Was prior DEC authorization received for this event? (Yes) (No)

DEC Official contacted: _____ Date of DEC approval: _____ / _____ / _____

Describe event in "Description of noncompliance and cause" area in Section 2. Detail the start and end dates and times in Section 2 also.

SECTION 4

Facility Representative: Marty Christofferson Title: EHS Professional Date: 3/4/2015

Phone #: (607) 533- 3815 Fax #: (607) 533- 4501

I Certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Principal Executive
Officer or Authorized Agent

SECTION 1



New York State Department of Environmental Conservation
Division of Water



Report of Noncompliance Event

To: DEC Water Contact John Marra DEC Region: 7

Report Type: 5 Day ☒ Permit Violation ☐ Order Violation ☐ Anticipated Noncompliance ☐ Bypass/Overflow ☐ Other

SECTION 2

SPDES #: NY-0101290 Facility: Cargill Inc. - Cayuga Mine

Date of noncompliance: 5/7/15 Location (Outfall, Treatment Unit, or Pump Station): Outfall 2

Description of noncompliance(s) and cause(s): On 5/7/15 an employee was going to take the monthly grab sample from the #2 outfall when he noticed YPS (Yellow Prussiate of Soda or Sodium Ferrocyanide) leaking out of the discharge area at our lower pad onto the ground. It was raining lightly at the time allowing the YPS to reach the drain. The solenoid diaphragm valve failed allowing the YPS to run out.

Has event ceased? ☒ (Yes) (No) If so, when? 5/7/15 Was event due to plant upset? ☒ (Yes) (No) SPDES limits violated? ☒ (Yes) (No)

Start date, time of event: 5/7/2015, ?:? ☒ (AM) (PM) End date, time of event: 5/7/15, ~1:30 ☒ (AM) ☒ (PM) Date, time oral notification made to DEC? 5/27/15, 10:09 ☒ (AM) (PM) DEC Official contacted: Fred M. Gillette

Immediate corrective actions: The employee notified the maintenance supervisor and the YPS was shut off to stop the flow.

Preventive (long term) corrective actions: The solenoid diaphragm valve was replaced. Different options are being evaluated for improved YPS system reliability.

SECTION 3

Complete this section if event was a bypass:

Bypass amount: _____ Was prior DEC authorization received for this event? (Yes) (No)

DEC Official contacted: _____ Date of DEC approval: ____/____/____

Describe event in "Description of noncompliance and cause" area in Section 2. Detail the start and end dates and times in Section 2 also.

SECTION 4

Facility Representative: Marty Christofferson Title: EHS Professional Date: 5 / 28 / 15

Phone #: (607) 533 - 3815 Fax #: (607) 533 - 4501

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X

Signature of Principal Executive
Officer or Authorized Agent