

## DMR Summary Report

## Cliffs Erie - Hoyt Lakes Mining Area (MN0042536)

First DMR in Delta: 7/1999

## Surface Discharge Station SD008 (Pit 2W dewatering pipe outfall 070)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Bicarbonates (HCO3)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Chloride, Total	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Flow	MG	CalMoTot	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Flow	mgd	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Hardness, Carbonate (as CaCo3)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg			NoDis			NoDis			NoDis			NoDis	
Iron, Dissolved (as Fe)	2.0 mg/L	CalMoMax			NoDis			NoDis			NoDis			NoDis	
Mercury, Total (as Hg)	ng/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
pH	8.5 SU	InstantMax			NoDis			NoDis			NoDis			NoDis	
pH	6.5 SU	InstantMin			NoDis			NoDis			NoDis			NoDis	
Solids, Total Dissolved (TDS)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Solids, Total Suspended (TSS)	20 mg/L	CalMoAvg			NoDis			NoDis			NoDis			NoDis	
Solids, Total Suspended (TSS)	30 mg/L	CalMoMax			NoDis			NoDis			NoDis			NoDis	
Specific Conductance, Field	umh/cm	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Sulfate, Total (as SO4)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis

## Surface Discharge Station SD009 (Pit 2W dewatering pipe outfall 080)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Bicarbonates (HCO3)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Chloride, Total	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Flow	MG	CalMoTot	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Flow	mgd	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Hardness, Carbonate (as CaCo3)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg			NoDis			NoDis			NoDis			NoDis	
Iron, Dissolved (as Fe)	2.0 mg/L	CalMoMax			NoDis			NoDis			NoDis			NoDis	
Mercury, Total (as Hg)	ng/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
pH	8.5 SU	InstantMax			NoDis			NoDis			NoDis			NoDis	
pH	6.5 SU	InstantMin			NoDis			NoDis			NoDis			NoDis	
Solids, Total Dissolved (TDS)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Solids, Total Suspended (TSS)	20 mg/L	CalMoAvg			NoDis			NoDis			NoDis			NoDis	
Solids, Total Suspended (TSS)	30 mg/L	CalMoMax			NoDis			NoDis			NoDis			NoDis	
Specific Conductance, Field	umh/cm	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis

Note: a limit in the Limit and Units column which is demarcated by asterisks is an Intervention limit, not a hard, violation-causing limit.

## DMR Summary Report

## Cliffs Erie - Hoyt Lakes Mining Area (MN0042536)

First DMR in Delta: 7/1999

## Surface Discharge Station SD009 (Pit 2W dewatering pipe outfall 080)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Sulfate, Total (as SO4)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis

## Surface Discharge Station SD010 (Pits 2/2E/3 dewatering pipe outfall 090)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Arsenic, Total (as As)	ug/L	SingleVal			NoDis			NoDis			NoDis			NoDis	
Bicarbonates (HCO3)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Chloride, Total	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Cobalt, Total (as Co)	ug/L	SingleVal			NoDis			NoDis			NoDis			NoDis	
Fibers, Ambiguous	MF/L	SingleVal				NoDis								NoDis	
Fibers, Amphibole	MF/L	SingleVal				NoDis								NoDis	
Fibers, Chrysotile	MF/L	SingleVal				NoDis								NoDis	
Fibers, Non-Amphibole Non Chrysotile	MF/L	SingleVal				NoDis								NoDis	
Fibers, Total	MF/L	SingleVal				NoDis								NoDis	
Flow	MG	CalMoTot	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Flow	mgd	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Hardness, Carbonate (as CaCo3)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg			NoDis			NoDis			NoDis			NoDis	
Iron, Dissolved (as Fe)	2.0 mg/L	CalMoMax			NoDis			NoDis			NoDis			NoDis	
Mercury, Total (as Hg)	ng/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
pH	8.5 SU	InstantMax			NoDis			NoDis			NoDis			NoDis	
pH	6.5 SU	InstantMin			NoDis			NoDis			NoDis			NoDis	
Solids, Total Dissolved (TDS)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Solids, Total Suspended (TSS)	20 mg/L	CalMoAvg			NoDis			NoDis			NoDis			NoDis	
Solids, Total Suspended (TSS)	30 mg/L	CalMoMax			NoDis			NoDis			NoDis			NoDis	
Specific Conductance, Field	umh/cm	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Sulfate, Total (as SO4)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Temperature Difference Between Sample & Reference Point in F	0 Deg F	InstantMax			NoDis			NoDis			NoDis			NoDis	
Temperature Difference Between Sample & Reference Point in F	0 Deg F	InstantMax			NoDis			NoDis			NoDis			NoDis	
Temperature, Water (C)	Deg C	CalMoMax			NoDis			NoDis			NoDis			NoDis	

Note: a limit in the Limit and Units column which is demarcated by asterisks is an Intervention limit, not a hard, violation-causing limit.

## DMR Summary Report

## Cliffs Erie - Hoyt Lakes Mining Area (MN0042536)

First DMR in Delta: 7/1999

## Surface Discharge Station SD011 (Pits 2/2E/3 dewatering pipe outfall 100)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Arsenic, Total (as As)	ug/L	SingleVal			NoDis			NoDis			NoDis			NoDis	
Bicarbonates (HCO3)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Chloride, Total	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Cobalt, Total (as Co)	ug/L	SingleVal			NoDis			NoDis			NoDis			NoDis	
Fibers, Ambiguous	MF/L	SingleVal				NoDis								NoDis	
Fibers, Amphibole	MF/L	SingleVal				NoDis								NoDis	
Fibers, Chrysotile	MF/L	SingleVal				NoDis								NoDis	
Fibers, Non-Amphibole Non Chrysotile	MF/L	SingleVal				NoDis								NoDis	
Fibers, Total	MF/L	SingleVal				NoDis								NoDis	
Flow	MG	CalMoTot	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Flow	mgd	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Hardness, Carbonate (as CaCo3)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg			NoDis			NoDis			NoDis			NoDis	
Iron, Dissolved (as Fe)	2.0 mg/L	CalMoMax			NoDis			NoDis			NoDis			NoDis	
Mercury, Total (as Hg)	ng/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
pH	8.5 SU	InstantMax			NoDis			NoDis			NoDis			NoDis	
pH	6.5 SU	InstantMin			NoDis			NoDis			NoDis			NoDis	
Solids, Total Dissolved (TDS)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Solids, Total Suspended (TSS)	20 mg/L	CalMoAvg			NoDis			NoDis			NoDis			NoDis	
Solids, Total Suspended (TSS)	30 mg/L	CalMoMax			NoDis			NoDis			NoDis			NoDis	
Specific Conductance, Field	umh/cm	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Sulfate, Total (as SO4)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Temperature Difference Between Sample & Reference Point in F	0 Deg F	InstantMax			NoDis			NoDis			NoDis			NoDis	
Temperature Difference Between Sample & Reference Point in F	0 Deg F	InstantMax			NoDis			NoDis			NoDis			NoDis	
Temperature, Water (C)	Deg C	CalMoMax			NoDis			NoDis			NoDis			NoDis	

## Surface Discharge Station SD012 (Pit 3 overflow channel outfall 110)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Arsenic, Total (as As)	ug/L	SingleVal			5.3			5.3			5.8			5.2	<b>5.4</b>
Bicarbonates (HCO3)	mg/L	SingleVal	181	181	183	177	174	168	168	335	168	172	170	177	<b>187.833</b>
Chloride, Total	mg/L	SingleVal	1.87	1.34	1.8	1.45	1.55	1.7	1.5	1.4	1.4	1.4	1.6	1.6	<b>1.551</b>
Cobalt, Total (as Co)	ug/L	SingleVal			<0.2			<0.2			<0.2			<0.2	
Fibers, Ambiguous	MF/L	SingleVal				<0.20								<0.20	

Note: a limit in the Limit and Units column which is demarcated by asterisks is an Intervention limit, not a hard, violation-causing limit.

## Cliffs Erie - Hoyt Lakes Mining Area (MN0042536)

First DMR in Delta: 7/1999

## Surface Discharge Station SD012 (Pit 3 overflow channel outfall 110)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Fibers, Amphibole	MF/L	SingleVal				<0.20								<0.20	
Fibers, Chrysotile	MF/L	SingleVal				<0.20								<0.20	
Fibers, Non-Amphibole Non Chrysotile	MF/L	SingleVal				<0.20								<0.20	
Fibers, Total	MF/L	SingleVal				<0.20								<0.20	
Flow	MG	CalMoTot	0.29	1.03	0.86	4	2	14	9.4	16	7.7	6.1	6.6	4.8	<b>6.065</b>
Flow	mgd	CalMoMax	0.0094	0.04	0.03	0.14	0.1	0.48	0.30	0.51	0.26	0.20	0.22	0.16	<b>0.204</b>
Hardness, Carbonate (as CaCo3)	mg/L	SingleVal	181	181	183	177	174	168	168	335	168	172	170	177	<b>187.833</b>
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg			<0.05			<0.05			<0.05			<0.05	
Iron, Dissolved (as Fe)	2.0 mg/L	CalMoMax			<0.05			<0.05			<0.05			<0.05	
Mercury, Total (as Hg)	ng/L	SingleVal	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	0.7	0.7	0.5	<0.5	<0.5	<0.5	<b>0.6</b>
pH	8.5 SU	InstantMax			8.4			8.5			8.5			8.5	<b>8.475</b>
pH	6.5 SU	InstantMin			8.4			8.5			8.5			8.3	<b>8.425</b>
Solids, Total Dissolved (TDS)	mg/L	SingleVal	302	290	319	243	298	295	286	271	284	267	274	289	<b>284.833</b>
Solids, Total Suspended (TSS)	20 mg/L	CalMoAvg			<1			2.4			<1			<1	<b>2.4</b>
Solids, Total Suspended (TSS)	30 mg/L	CalMoMax			<1			2.4			<1			<1	<b>2.4</b>
Specific Conductance, Field	umh/cm	CalMoMax	490	490	546	458	488	489	488	477	489	480	485	493	<b>489.417</b>
Sulfate, Total (as SO4)	mg/L	SingleVal	83.3	83.6	81.6	77.8	77.1	77	78	75	75	76	77	77	<b>78.2</b>
Temperature Difference Between Sample & Reference Point in F	0 Deg F	InstantMax			1.4			5.4			3.3			1.1	<b>2.8</b>
Temperature Difference Between Sample & Reference Point in F	0 Deg F	InstantMax			1.4			5.4			3.3			1.1	<b>2.8</b>
Temperature, Water (C)	Deg C	CalMoMax			1.0			16.7			21.2			0.7	<b>9.9</b>

## Surface Discharge Station SD013 (Pit 2W dewatering pipe outfall 120)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Arsenic, Total (as As)	ug/L	SingleVal			NoDis			NoDis			NoDis			NoDis	
Bicarbonates (HCO3)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Chloride, Total	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Cobalt, Total (as Co)	ug/L	SingleVal			NoDis			NoDis			NoDis			NoDis	
Flow	MG	CalMoTot	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Flow	mgd	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Hardness, Carbonate (as CaCo3)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg			NoDis			NoDis			NoDis			NoDis	
Iron, Dissolved (as Fe)	2.0 mg/L	CalMoMax			NoDis			NoDis			NoDis			NoDis	
Mercury, Total (as Hg)	ng/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	

Note: a limit in the Limit and Units column which is demarcated by asterisks is an Intervention limit, not a hard, violation-causing limit.

## DMR Summary Report

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First DMR in Delta: 7/1999

## Surface Discharge Station SD013 (Pit 2W dewatering pipe outfall 120)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
pH	8.5 SU	InstantMax			NoDis			NoDis			NoDis			NoDis	
pH	6.5 SU	InstantMin			NoDis			NoDis			NoDis			NoDis	
Solids, Total Dissolved (TDS)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Solids, Total Suspended (TSS)	20 mg/L	CalMoAvg			NoDis			NoDis			NoDis			NoDis	
Solids, Total Suspended (TSS)	30 mg/L	CalMoMax			NoDis			NoDis			NoDis			NoDis	
Specific Conductance, Field	umh/cm	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	
Sulfate, Total (as SO4)	mg/L	SingleVal	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	

## Surface Discharge Station SD026 (2nd Creek headwaters culvert outfall 251)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
1,2-Dichloroethylene (cis-)	ug/L	SingleVal									<0.5				
Benzene	ug/L	SingleVal									<0.5				
Bicarbonates (HCO3)	mg/L	SingleVal	528	537	521	458	476	466	485	471	497	494	472	495	<b>491.667</b>
Boron, Total (as B)	ug/L	SingleVal			265			250			257			241	<b>253.25</b>
Calcium, Total (as Ca)	mg/L	SingleVal									82				<b>82.0</b>
Cations, Total	meq/L	SingleVal									15				<b>15.0</b>
Chloride, Total	mg/L	SingleVal	12.3	12	11.8	10.9	11.2	11	11	11	12	11	11	11	<b>11.35</b>
Chloroform	ug/L	SingleVal									<1				
Cobalt, Total (as Co)	ug/L	SingleVal			0.7			0.49			0.27			<1	<b>0.487</b>
Ethylbenzene	ug/L	SingleVal									<1				
Flow	MG	CalMoTot	19.06	20.58	29	23	20	NoDis	16	35	20	20	19	19	<b>21.876</b>
Flow	mgd	CalMoMax	0.615	0.74	0.94	0.76	0.64	NoDis	0.52	1.1	0.64	0.64	0.64	0.61	<b>0.713</b>
Fluoride, Total (as F)	mg/L	SingleVal			1.94			2.0			2.1			1.9	<b>1.985</b>
Hardness, Carbonate (as CaCo3)	mg/L	SingleVal	528	537	521	458	476	466	485	471	497	494	472	495	<b>491.667</b>
Magnesium, Total (as Mg)	mg/L	SingleVal									106				<b>106.0</b>
Manganese, Total (as Mn)	ug/L	SingleVal			980			178			259			707	<b>531.0</b>
Mercury, Total (as Hg)	ng/L	SingleVal				<0.5		<0.5		0.6		<0.5			<b>0.6</b>
Molybdenum, Total (as Mo)	ug/L	SingleVal			22.9			53			38			21	<b>33.725</b>
Organics, Diesel Range as diesel, Total	ug/L	SingleVal	<0.1	<100	<100	<100	<80	<90	190	<80	<80	<80	<80	<80	<b>190.0</b>
pH	8.5 SU	InstantMax	7.8	7.9	8.0	8.1	8.2	8.1	8.1	7.9	8.1	8.1	8.2	8.0	<b>8.042</b>
pH	6.5 SU	InstantMin	7.8	7.9	8.0	8.1	8.2	8.1	8.1	7.9	8.1	8.1	8.2	8.0	<b>8.042</b>
Potassium, Total (as K)	mg/L	SingleVal									8.6				<b>8.6</b>
Sodium, % Total Cations in meq/L	%	SingleVal									18				<b>18.0</b>
Sodium, Total (as Na)	mg/L	SingleVal									44				<b>44.0</b>

Note: a limit in the Limit and Units column which is demarcated by asterisks is an Intervention limit, not a hard, violation-causing limit.

## Cliffs Erie - Hoyt Lakes Mining Area (MN0042536)

First DMR in Delta: 7/1999

## Surface Discharge Station SD026 (2nd Creek headwaters culvert outfall 251)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Solids, Total Dissolved (TDS)	mg/L	SingleVal	791	851	815	740	732	811	744	737	741	767	706	714	<b>762.417</b>
Solids, Total Suspended (TSS)	30 mg/L	CalMoAvg	<1	8	2.4	2.4	3	2.8	4	4	2	1	2	4	<b>3.236</b>
Solids, Total Suspended (TSS)	60 mg/L	CalMoMax	<1	8	2.4	2.4	3	2.8	4	4	2	1	2	4	<b>3.236</b>
Specific Conductance, Field	1000 umh/cm	CalMoAvg	1298	1350	1316	1170	1175	1190	1181	1190	1215	1170	1141	1211	<b>1,217.25</b>
Specific Conductance, Field	umh/cm	CalMoMax	1298	1350	1316	1170	1175	1190	1181	1190	1215	1170	1141	1211	<b>1,217.25</b>
Sulfate, Total (as SO4)	mg/L	SingleVal	201	207	195	173	171	167	164	153	163	162	159	157	<b>172.667</b>
Tetrachloroethylene (Perchloroethylene)	ug/L	SingleVal									<1				
Toluene	ug/L	SingleVal									<1				
Trichloroethylene (TCE or Trichloroethene)	ug/L	SingleVal									<1				
Xylenes, Total	ug/L	SingleVal									<1				

## Surface Discharge Station SD030 (Pit 5S overflow channel [unauthorized])

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Arsenic, Total (as As)	ug/L	SingleVal	4.4	3.3	3.6	2.8	2.97	3.1	3.6	4.2	3.6	3.9	4.0	4.3	<b>3.648</b>
Bicarbonates (HCO3)	mg/L	SingleVal	173	179	176	162	163	163	157	157	162	165	164	169	<b>165.833</b>
Chloride, Total	mg/L	SingleVal	2.45	1.95	2.49	2.13	2.18	2.2	2.1	2.1	2.1	2.1	2.4	2.3	<b>2.208</b>
Cobalt, Total (as Co)	ug/L	SingleVal	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.4	<b>0.4</b>
Fibers, Ambiguous	MF/L	SingleVal				<0.20								<0.20	
Fibers, Amphibole	MF/L	SingleVal				<0.20								<0.20	
Fibers, Chrysotile	MF/L	SingleVal				<0.20								<0.20	
Fibers, Non-Amphibole Non Chrysotile	MF/L	SingleVal				<0.20								<0.20	
Fibers, Total	MF/L	SingleVal				<0.20								<0.20	
Flow	0 MG	CalMoTot	0	0	0	0	0	0	0	0	0	0	0	0	<b>0.0</b>
Flow	mgd	CalMoMax	0	0	0	0	0	0	0	0	0	0	0	0	<b>0.0</b>
Hardness, Carbonate (as CaCo3)	mg/L	SingleVal	173	179	176	162	163	163	157	157	162	165	164	169	<b>165.833</b>
Iron, Dissolved (as Fe)	mg/L	SingleVal	<0.050	<0.050	<0.05	<0.050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Mercury, Total (as Hg)	ng/L	SingleVal	0.5	<0.5	<0.5	<0.5	<0.05	<0.5	0.6	0.6	0.5	<0.5	<0.5	<0.5	<b>0.55</b>
pH	SU	InstantMax	7.9	8.1	8.1	8.1	8.3	8.5	8.2	8.5	8.5	8.5	8.4	8.4	<b>8.292</b>
pH	SU	InstantMin	7.9	8.1	8.1	8.1	8.3	8.5	8.2	8.5	8.5	8.5	8.4	8.4	<b>8.292</b>
Solids, Total Dissolved (TDS)	mg/L	SingleVal	345	353	325	271	336	303	296	320	307	313	279	339	<b>315.583</b>
Solids, Total Suspended (TSS)	mg/L	SingleVal		2.4		2		2.8		<1		<1		<1	<b>2.4</b>
Specific Conductance, Field	umh/cm	SingleVal	558	572	573	504	511	506	505	506	517	518	510	518	<b>524.833</b>
Sulfate, Total (as SO4)	mg/L	SingleVal	119	116	108	98.2	98.7	98	101	97	95	97	98	97	<b>101.908</b>

Note: a limit in the Limit and Units column which is demarcated by asterisks is an Intervention limit, not a hard, violation-causing limit.

## DMR Summary Report

## Cliffs Erie - Hoyt Lakes Mining Area (MN0042536)

First DMR in Delta: 7/1999

## Surface Discharge Station SD030 (Pit 5S overflow channel [unauthorized])

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Temperature Difference Between Sample & Reference Point in F	Deg F	InstantMax			0.5	1.98	2.88	7.9	5.6	5.9	4.8	6.1	8.5		<b>4.907</b>
Temperature Difference Between Sample & Reference Point in F	Deg F	InstantMax			0.5	1.98	2.88	7.9	5.6	5.9	4.8	6.1	8.5		<b>4.907</b>
Temperature, Water (C)	Deg C	InstantMax			0.5	8.8	11.1	18.1	24.0	24.6	22.0	12.7	5.8		<b>14.178</b>
Turbidity	NTU	SingleVal	0.12	0.40	0.20	0.54	0.45	0.49	0.49	0.27	0.30	0.75	1.2	1.1	<b>0.526</b>

## Surface Discharge Station SD033 (Rail Culvert NE of Pit 5N Loadout Pocket)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Bicarbonates (HCO3)	mg/L	SingleVal	318	318	317	294	327	333	340	337	347	367	359	346	<b>333.583</b>
Chloride, Total	mg/L	SingleVal	4.7	4.17	4.51	3.58	4.04	4.2	4.1	4.0	4.1	4.3	4.4	4.6	<b>4.225</b>
Flow	MG	CalMoTot		7.74		24		4.2		12		14		8.7	<b>11.773</b>
Flow	mgd	CalMoMax		0.28		0.80		0.70		0.38		0.45		0.28	<b>0.482</b>
Hardness, Carbonate (as CaCo3)	mg/L	SingleVal	318	318	317	294	327	333	340	337	347	367	359	342	<b>333.25</b>
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg		<0.05		<0.1		0.1		0.1		<0.05		<0.05	<b>0.1</b>
Iron, Dissolved (as Fe)	2.0 mg/L	CalMoMax		<0.05		<0.1		0.1		0.1		<0.05		<0.05	<b>0.1</b>
Mercury, Total (as Hg)	ng/L	SingleVal	1.1	0.7	0.6	1	0.8	0.8	1.1	0.9	1.1	1.1	0.9	0.35	<b>0.871</b>
pH	8.5 SU	InstantMax		7.9		8.1		8.0		8.0		7.9		8.3	<b>8.033</b>
pH	6.5 SU	InstantMin		7.9		8.1		8.0		8.0		7.9		8.0	<b>7.983</b>
Silver, Total (as Ag)	ug/L	SingleVal			<0.2			<0.4			<0.2			<0.2	
Solids, Total Dissolved (TDS)	mg/L	SingleVal	1850	2140	1850	1540	1680	1810	1720	1840	1810	1770	1710	1955	<b>1,806.25</b>
Solids, Total Suspended (TSS)	20 mg/L	CalMoAvg		3.2		5.2		5.6		4		5		3	<b>4.333</b>
Solids, Total Suspended (TSS)	30 mg/L	CalMoMax		3.2		5.2		5.6		4		5		3	<b>4.333</b>
Specific Conductance, Field	umh/cm	SingleVal	2271	2333	2534	1926	2204	2242	2175	2265	2381	2191	1865	1900	<b>2,190.583</b>
Sulfate, Total (as SO4)	mg/L	SingleVal	1220	1260	1160	922	1060	1030	1050	1080	1100	1090	1060	1090	<b>1,093.5</b>
Turbidity	25 NTU	CalMoAvg		0.40		1		0.53		1		1		1	<b>0.822</b>
Turbidity	NTU	CalMoMax		0.40		1		0.53		1		1		1	<b>0.822</b>

## Surface Water Station SW002 (Wyman Ck, DMIRR grade at CR 666, stn 702)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Fibers, Ambiguous	MF/L	SingleVal				<0.20								<0.20	
Fibers, Amphibole	MF/L	SingleVal				<0.20								<0.20	
Fibers, Chrysotile	MF/L	SingleVal				<0.20								<0.20	

Note: a limit in the Limit and Units column which is demarcated by asterisks is an Intervention limit, not a hard, violation-causing limit.

## DMR Summary Report

## Cliffs Erie - Hoyt Lakes Mining Area (MN0042536)

First DMR in Delta: 7/1999

## Surface Water Station SW002 (Wyman Ck, DMIRR grade at CR 666, stn 702)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Fibers, Non-Amphibole Non Chrysotile	MF/L	SingleVal				<0.20								<0.20	
Fibers, Total	MF/L	SingleVal				<0.20								<0.20	
Flow, Stream, Instantaneous	cfs	SingleVal				4.51								5.4	<b>4.955</b>
Solids, Total Suspended (TSS)	mg/L	SingleVal				2.8								3.3	<b>3.05</b>
Turbidity	NTU	SingleVal				4.31								9.2	<b>6.755</b>

## Surface Water Station SW006 (Untreated HL city water supply, stn 700)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Fibers, Ambiguous	MF/L	SingleVal				<0.20								<0.20	
Fibers, Amphibole	MF/L	SingleVal				<0.20								<0.20	
Fibers, Chrysotile	MF/L	SingleVal				<0.20								<0.20	
Fibers, Non-Amphibole Non Chrysotile	MF/L	SingleVal				<0.20								<0.20	
Fibers, Total	MF/L	SingleVal				<0.20								<0.20	
Flow	mgd	SingleVal				0								NoFlo	<b>0.0</b>
Solids, Total Suspended (TSS)	mg/L	SingleVal				2.5								<1	<b>2.5</b>
Turbidity	NTU	SingleVal				2.16								4.5	<b>3.33</b>

## Surface Water Station SW007 (E Branch Wyman Creek at FR 117)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Flow, Stream, Instantaneous	cfs	CalMoAvg	0.46	0.41	2.88	4.28	1	1.2	0.72	2.3	0.8	3.0	3.4	2.8	<b>1.938</b>
Flow, Stream, Instantaneous	cfs	CalMoMax	0.46	0.41	2.88	4.28	1	1.2	0.72	2.3	0.8	3.0	4.3	2.8	<b>2.013</b>
Temperature, Water (C)	Deg C	CalMoAvg	0.3	0.1	0.2	7.7	9.5	13.7	20.9	21.3	19.3	9.3	1.1	0.1	<b>8.625</b>
Temperature, Water (C)	Deg C	CalMoMax	0.3	0.1	0.2	7.7	9.5	13.7	20.9	21.3	19.3	9.3	1.1	0.1	<b>8.625</b>

## Waste Stream Station WS001 (Knox Refueling Area pipe station 801)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Flow	MG	CalMoTot	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	
Flow	mgd	CalMoMax	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	0	0	0	<b>0.0</b>
Organics, Diesel Range as diesel, Total	ug/L	CalMoMax	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	
Solids, Total Suspended (TSS)	mg/L	CalMoMax	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	

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Note: a limit in the Limit and Units column which is demarcated by asterisks is an Intervention limit, not a hard, violation-causing limit.



## Cliffs Erie - Hoyt Lakes Mining Area (MN0042536)

First DMR in Delta: 7/1999

## Waste Stream Station WS001 (Knox Refueling Area pipe station 801)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Water Level At Sample Collection Time	feet	CalMoMax	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo	NoFlo

## Waste Stream Station WS002 (Ligninsulfonate as applied)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
2,3,7,8,-Tetrachlorodibenzofuran	ug/L	SingleVal												NoFlo	
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	ug/L	SingleVal												NoFlo	
Bicarbonates (HCO3)	mg/L	SingleVal												NoFlo	
BOD, Carbonaceous 05 Day (20 Deg C)	mg/L	SingleVal												NoFlo	
Calcium, Total (as Ca)	mg/L	SingleVal												NoFlo	
Chloride, Total	mg/L	SingleVal												NoFlo	
COD (Chemical Oxygen Demand)	mg/L	SingleVal												NoFlo	
Flow	0.1 MG	CalYrMax												NoFlo	
Magnesium, Total (as Mg)	mg/L	SingleVal												NoFlo	
Mercury, Total (as Hg)	ug/L	SingleVal												NoFlo	
Nitrogen, Ammonia, Total (as N)	mg/L	SingleVal												NoFlo	
pH, Field	SU	SingleVal												NoFlo	
Phenols, Total	ug/L	SingleVal												NoFlo	
Phosphorus, Total (as P)	mg/L	SingleVal												NoFlo	
Sodium, Total (as Na)	mg/L	SingleVal												NoFlo	
Solids, Total Dissolved (TDS)	mg/L	SingleVal												NoFlo	
Specific Conductance, Field	umh/cm	SingleVal												NoFlo	
Sulfate, Total (as SO4)	mg/L	SingleVal												NoFlo	
Zinc, Total (as Zn)	mg/L	SingleVal												NoFlo	

## Waste Stream Station WS003 (Coherex as applied)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
BOD, Carbonaceous 05 Day (20 Deg C)	mg/L	SingleVal												NoFlo	
Chloride, Total	mg/L	SingleVal												NoFlo	
COD (Chemical Oxygen Demand)	mg/L	SingleVal												NoFlo	
Flow	0.1 MG	CalYrMax												NoFlo	
Mercury, Total (as Hg)	ug/L	SingleVal												NoFlo	
Methylene Blue Active Substances (Surfactants)	mg/L	SingleVal												NoFlo	

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Note: a limit in the Limit and Units column which is demarcated by asterisks is an Intervention limit, not a hard, violation-causing limit.

## DMR Summary Report

## Cliffs Erie - Hoyt Lakes Mining Area (MN0042536)

First DMR in Delta: 7/1999

## Waste Stream Station WS003 (Coherex as applied)

<u>Parameter Name</u>	<u>Limit and Units</u>	<u>Limit Type</u>	<u>1/10</u>	<u>2/10</u>	<u>3/10</u>	<u>4/10</u>	<u>5/10</u>	<u>6/10</u>	<u>7/10</u>	<u>8/10</u>	<u>9/10</u>	<u>10/10</u>	<u>11/10</u>	<u>12/10</u>	<u>Ave</u>
Naphthalene	ug/L	SingleVal													NoFlo
Organics, Diesel Range as diesel, Total	ug/L	SingleVal													NoFlo
Phosphorus, Total (as P)	mg/L	SingleVal													NoFlo
Pyrene	ug/L	SingleVal													NoFlo
Solids, Total Dissolved (TDS)	mg/L	SingleVal													NoFlo
Specific Conductance, Field	umh/cm	SingleVal													NoFlo
Sulfate, Total (as SO4)	mg/L	SingleVal													NoFlo

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Note: a limit in the Limit and Units column which is demarcated by asterisks is an Intervention limit, not a hard, violation-causing limit.