

DMR Summary Report

ArcelorMittal Minorca Mine Inc - Laurentian (MN0059633)

First DMR in Delta: 4/1999

Surface Discharge Station SD001 (Alt. Laurentian Mine Discharge (010))

<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	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Flow	mgd	CalMoAvg	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
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Iron, Dissolved (as Fe)	2.0 mg/L	DailyMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Mercury, Total (as Hg)	1.8 ng/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Mercury, Total (as Hg)	3.2 ng/L	DailyMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Nitrogen, Nitrate, Total (as N)	mg/L	SingleVal			NoDis			NoDis			NoDis			NoDis	
pH	8.5 SU	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
pH	6.5 SU	CalMoMin	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	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Solids, Total Suspended (TSS)	30 mg/L	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
Turbidity	25 NTU	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Turbidity	NTU	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis

Surface Discharge Station SD002 (Alt. Laurentian Mine Discharge (011))

<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	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Flow	mgd	CalMoAvg	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
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Iron, Dissolved (as Fe)	2.0 mg/L	DailyMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Mercury, Total (as Hg)	1.8 ng/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Mercury, Total (as Hg)	3.2 ng/L	DailyMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Nitrogen, Nitrate, Total (as N)	mg/L	SingleVal			NoDis			NoDis			NoDis			NoDis	
pH	8.5 SU	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
pH	6.5 SU	CalMoMin	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	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Solids, Total Suspended (TSS)	30 mg/L	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
Turbidity	25 NTU	CalMoAvg	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.

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ArcelorMittal Minorca Mine Inc - Laurentian (MN0059633)

First DMR in Delta: 4/1999

Surface Discharge Station SD002 (Alt. Laurentian Mine Discharge (011))

<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>
Turbidity	NTU	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	

Surface Discharge Station SD003 (Primary Laurentian Mine Discharge (012))

<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	102.67	92.73	105.67	111.00	85.38	96.6	104.35	96.7	106.0	99.8	96.9	100.2	99.833
Flow	mgd	CalMoAvg	3.31	3.31	3.4	3.7	2.75	3.22	3.36	3.11	3.53	3.22	3.23	3.23	3.281
Flow	mgd	CalMoMax	3.31	3.31	3.4	3.7	2.75	3.22	3.36	3.11	3.53	3.22	3.23	3.23	3.281
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Iron, Dissolved (as Fe)	2.0 mg/L	DailyMax	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Mercury, Total (as Hg)	1.8 ng/L	CalMoAvg	1.15	0.65	0.75	0.8	2.05	0.8	0.65	0.83	0.825	0.7215	0.73	0.739	0.891
Mercury, Total (as Hg)	3.2 ng/L	DailyMax	1.6	0.7	0.8	0.9	3.5	0.9	0.7	0.95	0.839	0.795	0.741	0.789	1.101
Nitrogen, Nitrate, Total (as N)	mg/L	SingleVal			0.24			1.16			1.6			0.75	0.938
pH	8.5 SU	CalMoMax	8.3	8.2	8.1	8.0	8.9	8.1	8.3	8.3	8.2	8.2	8.1	8.1	8.233
pH	6.5 SU	CalMoMin	8.0	8.0	8.0	7.9	7.9	7.5	8.2	8.0	8.0	8.0	8.1	8.1	7.975
Solids, Total Suspended (TSS)	20 mg/L	CalMoAvg	1.1	<1	1.3	1.9	8.5	1.7	3.5	1.6	3.73	1.5	1.45	1.3	2.507
Solids, Total Suspended (TSS)	30 mg/L	CalMoMax	1.2	<1	1.6	2.8	16	2.4	6	2	9.2	2	2.8	1.6	4.327
Sulfate, Total (as SO4)	mg/L	SingleVal	104	100	95.3	100	70.3	104	125	110	121	128	126	115	108.217
Turbidity	25 NTU	CalMoAvg	0.115	0.40	1.475	1.10	5.2	0.57	6.5	3.75	4.55	1.55	2.1	0.145	2.288
Turbidity	NTU	CalMoMax	0.12	0.70	2.8	1.97	8.93	0.83	10.9	3.8	7.3	2.4	3.5	0.18	3.619

Surface Discharge Station SD005 (East Pit #1 Discharge)

<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	2.88	1.03	5.42	1.9	2.48	5.165	4.875	2.37	7.1	4.35	0.477	NoDis	3.459
Flow	mgd	CalMoAvg	1.44	1.03	2.32	1.9	1.9	2.21	2.11	2.37	2.36	2.175	1.59	NoDis	1.946
Flow	mgd	CalMoMax	1.44	1.03	2.32	1.9	1.9	2.21	2.11	2.37	2.36	2.175	1.59	NoDis	1.946
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	0.167	0.092	NoDis	0.13
Iron, Dissolved (as Fe)	2.0 mg/L	DailyMax	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	0.167	0.092	NoDis	0.13
Mercury, Total (as Hg)	1.8 ng/L	CalMoAvg	0.9	0.8	1.9	2.5	5.6	1.7	1.1	0.78	1.165	1.46	23.2	NoDis	3.737
Mercury, Total (as Hg)	3.2 ng/L	DailyMax	0.9	0.8	3.0	2.7	5.6	2.4	1.2	0.78	1.3	1.46	23.2	NoDis	3.94
Nitrogen, Nitrate, Total (as N)	mg/L	SingleVal			16.4			7.89			8.44			NoDis	10.91
pH	8.5 SU	CalMoMax	8.5	8.2	8.6	8.3	8.3	8.3	8.2	8.3	8.6	8.7	8.0	NoDis	8.364
pH	6.5 SU	CalMoMin	8.5	8.2	8.2	8.2	8.3	7.8	8.2	8.3	8.3	8.7	8.0	NoDis	8.245

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Surface Discharge Station SD005 (East Pit #1 Discharge)

<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 Suspended (TSS)	20 mg/L	CalMoAvg	11.6	6.4	27.8	10.8	46.7	4.4	4	2.8	2.7	10.5	124.5	NoDis	22.927
Solids, Total Suspended (TSS)	30 mg/L	CalMoMax	11.6	6.4	50.8	11.2	46.7	4.8	4.4	2.8	4.8	12	187	NoDis	31.136
Sulfate, Total (as SO4)	mg/L	SingleVal	95.5	82	74.6	71.5	72.4	92.8	94.6	82.3	103	82.2	136	NoDis	89.718
Turbidity	25 NTU	CalMoAvg	10.7	4.2	31.05	11.91	87.8	8.67	6.1	3.4	4.2	29.3	89.8	NoDis	26.103
Turbidity	NTU	CalMoMax	10.7	4.2	58.7	19.8	87.8	10.9	9.2	3.4	4.9	29.3	89.8	NoDis	29.882

Surface Discharge Station SD006 (East Pit #2 Discharge)

<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	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Flow	mgd	CalMoAvg	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
Iron, Dissolved (as Fe)	1.0 mg/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Iron, Dissolved (as Fe)	2.0 mg/L	DailyMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Mercury, Total (as Hg)	1.8 ng/L	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Mercury, Total (as Hg)	3.2 ng/L	DailyMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Nitrogen, Nitrate, Total (as N)	mg/L	SingleVal			NoDis			NoDis			NoDis			NoDis	NoDis
pH	8.5 SU	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
pH	6.5 SU	CalMoMin	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	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Solids, Total Suspended (TSS)	30 mg/L	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
Turbidity	25 NTU	CalMoAvg	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis
Turbidity	NTU	CalMoMax	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis

Surface Water Station SW001 (McKinley Mine Pit Lake overflow/discharge)

<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				197			185			206			196.0
Chloride, Total	mg/L	SingleVal				3.67			5.01			4.75			4.477
Flow, Stream, Instantaneous	cfs	SingleVal				13.22			11.51			10.76			11.83
Hardness, Calcium & Magnesium, Calculated (as CaCO3)	mg/L	SingleVal				320			303			338			320.333
pH, Field	SU	SingleVal				7.89			8.2			8.08			8.057
Solids, Total Dissolved (TDS)	mg/L	SingleVal				307			360			356			341.0

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: 4/1999

Surface Water Station SW001 (McKinley Mine Pit Lake overflow/discharg)

<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>
Specific Conductance, Field	umh/cm	SingleVal				519			631			616			588.667
Sulfate, Total (as SO4)	mg/L	SingleVal				101			108			112			107.0

Surface Water Station SW002 (Unnamed Stream at Heritage Rd. crossing)

<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				224			234			236			231.333
Chloride, Total	mg/L	SingleVal				7.91			10.5			9.78			9.397
Flow, Stream, Instantaneous	cfs	SingleVal				10.42			9.94			5.67			8.677
Hardness, Calcium & Magnesium, Calculated (as CaCO3)	mg/L	SingleVal				318			291			315			308.0
pH, Field	SU	SingleVal				8.19			7.98			7.99			8.053
Solids, Total Dissolved (TDS)	mg/L	SingleVal				344			384			380			369.333
Specific Conductance, Field	umh/cm	SingleVal				563			714			675			650.667
Sulfate, Total (as SO4)	mg/L	SingleVal				94.9			92.9			108			98.6

Surface Water Station SW003 (Unnamed Stream at Judd Rd. crossing)

<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				188			208			192			196.0
Chloride, Total	mg/L	SingleVal				44.6			8.16			7.42			20.06
Flow, Stream, Instantaneous	cfs	SingleVal				18.27			16.29			14.19			16.25
Hardness, Calcium & Magnesium, Calculated (as CaCO3)	mg/L	SingleVal				255			256			243			251.333
pH, Field	SU	SingleVal				8.06			8.03			7.89			7.993
Solids, Total Dissolved (TDS)	mg/L	SingleVal				273			325			279			292.333
Specific Conductance, Field	umh/cm	SingleVal				458.3			606			511			525.1
Sulfate, Total (as SO4)	mg/L	SingleVal				69.1			65.8			63.3			66.067

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