

DMR Summary Report

Mesabi Nugget Delaware LLC (MN0067687)

First DMR in Delta: 8/2005

Surface Discharge Station SD001 (Tailings Filter #2 Dschrg (old SD003))

<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					
Bicarbonates (HCO3)	396 mg/L	CalMoAvg	346	347	346	330	336	322	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	337.833
Bicarbonates (HCO3)	445 mg/L	CalMoMax	347	348	347	333	338	334	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	341.167
Cadmium, Total (as Cd)	ug/L	SingleVal								NoDis					
Chloride, Total	mg/L	SingleVal	10	9.87	10.1	9.67	10.3	9.89	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	9.972
Chromium, Total (as Cr)	ug/L	SingleVal								NoDis					
Cobalt, Total (as Co)	ug/L	SingleVal								NoDis					
Copper, Total (as Cu)	ug/L	SingleVal								NoDis					
Flow	MG	CalMoTot	110.67	79.6	88.4	83.7	88.7	83.2	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	89.045
Flow	mgd	DailyAve	3.57	2.8	2.9	2.79	2.86	2.77	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	2.948
Flow	mgd	DailyMax	8.34	3.5	4.3	3.72	3.56	3.49	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	4.485
Hardness, Calcium & Magnesium, Calculated (as CaCO3)	740 mg/L	CalMoAvg	762	779	785	740	726	742	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	755.667
Hardness, Calcium & Magnesium, Calculated (as CaCO3)	831 mg/L	CalMoMax	769	800	800	753	735	754	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	768.5
Lead, Total (as Pb)	ug/L	SingleVal								NoDis					
Mercury, Total (as Hg)	0.000070 kg/day	CalMoMax	0.0000140	0.0000150	0.0000120	0.0000050	0.0000060	0.000005	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	0.0
Mercury, Total (as Hg)	1.8 ng/L	CalMoAvg	0.8	0.8	0.6	<0.5	<0.5	0.25	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	0.613
Mercury, Total (as Hg)	3.2 ng/L	CalMoMax	1.0	1.1	1.1	<0.5	<0.5	0.5	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	0.925
Molybdenum, Total (as Mo)	ug/L	SingleVal	6.9	6.8	<5	<5	5.36	1.98	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	5.26
Nickel, Total (as Ni)	ug/L	SingleVal								NoDis					
Nickel, Total (as Ni)	ug/L	SingleVal								NoDis					
pH	8.5 SU	CalMoMax	8.4	8.4	8.3	8.3	8.4	8.4	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	8.367
pH	6.5 SU	CalMoMin	8.2	8.3	8.1	8.1	8.4	8.1	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	8.2
Selenium, Total (as Se)	ug/L	SingleVal								NoDis					
Sodium, Total (as Na)	mg/L	SingleVal	15	15.6	15.4	15.3	17.6	18.7	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	16.267
Solids, Total Dissolved (TDS)	1619 mg/L	CalMoAvg	843.5	835	830	880	793	868	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	841.583
Solids, Total Dissolved (TDS)	1818 mg/L	CalMoMax	857	838	833	888	825	889	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	855.0
Solids, Total Suspended (TSS)	mg/L	CalMoAvg	2.15	<1	1.6	1.9	2.3	1.2	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	1.83
Solids, Total Suspended (TSS)	mg/L	CalMoMax	3	<1	2	2.7	3.6	2.4	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	2.74
Specific Conductance	2159 umh/cm	CalMoAvg	1240	1258	1169	1160	1226	1233	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	1,214.333
Specific Conductance	2425 umh/cm	CalMoMax	1243	1258	1232	1231	1230	1250	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	1,240.667
Sulfate, Total (as SO4)	mg/L	SingleVal	400	381	398	371	403	374	NoDis	NoDis	NoDis	NoDis	NoDis	NoDis	387.833
Thallium, Total (as Tl)	ug/L	SingleVal								NoDis					
Zinc, Total (as Zn)	ug/L	SingleVal								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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<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>
Zinc, Total (as Zn)	ug/L	SingleVal								NoDis					

Surface Water Station SW001 (Second Cr. - Upstream)

<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	SingleVal	0.71	1.68	1.80	1.56	0.3	0.9	0.7	0.4	0.3	0.4	0.3	0.7	0.813
Hardness, Calcium & Magnesium, Calculated (as CaCO3)	mg/L	SingleVal		785			471			546			525		581.75
Solids, Total Dissolved (TDS)	mg/L	SingleVal		943			586			640			620		697.25
Specific Conductance	umh/cm	SingleVal		1460			920			1041			953		1,093.5

Surface Water Station SW002 (Second Cr. - Downstream)

<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	SingleVal	6.44	6.96	7.93	4.23	4.0	4.8	0.1	0.1	0.1	0.1	0.1	0.2	2.922
Hardness, Calcium & Magnesium, Calculated (as CaCO3)	mg/L	SingleVal		739			642			354			348		520.75
Solids, Total Dissolved (TDS)	mg/L	SingleVal		883			759			392			431		616.25
Specific Conductance	umh/cm	SingleVal		954			1100			669			616		834.75

Surface Water Station SW003 (Area 1 Pit)

<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		350			332			311			327		330.0
Hardness, Calcium & Magnesium, Calculated (as CaCO3)	mg/L	SingleVal		736			725			713			760		733.5
Mercury, Total (as Hg)	ng/L	SingleVal		0.9			<0.5			0.8			<0.5		0.85
pH	SU	SingleVal		8.4			8.4			8.4			8.4		8.4
Solids, Total Dissolved (TDS)	mg/L	SingleVal		83.5			818			73			874		462.125
Specific Conductance	umh/cm	SingleVal		1259			1230			1225			1276		1,247.5

Waste Stream Station WS001 (Influent to Wastewater Treatment System)

<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	mgd	DailyAve	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.152	1.416

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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Waste Stream Station WS001 (Influent to Wastewater Treatment System)

<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>
Mercury, Total (as Hg)	ng/L	SingleVal	170	296	133	130	63.0	214	56.8	77.5	623	39.6	1400	1040	353.575

Waste Stream Station WS002 (Influent to Tailings Filter #1)

<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	mgd	DailyAve	0.612	0.612	0.61	0.61	0.612	0.612	0.612	0.612	0.612	0.612	0.612	0.58	0.609
Mercury, Total (as Hg)	ng/L	SingleVal	14	23.0	15.6	30.6	44.8	59.6	53.4	64.2	39.3	25.1	17.1	34.1	35.067

Waste Stream Station WS003 (Dschrgr fr Tailings Filter #1 to Pit 1)

<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>
Chloride, Total	mg/L	SingleVal	23	43.1	47.3	74.2	48.1	43.8	70.9	98.7	72.9	110	88	64.9	65.408
Flow	mgd	DailyAve	0.612	0.612	0.61	0.61	0.612	0.612	0.612	0.612	0.612	0.612	0.612	0.64	0.614
Hardness, Calcium & Magnesium, Calculated (as CaCO3)	mg/L	SingleVal	678	513	845	146	362	861	960	902	541	935	1230	1020	749.417
Mercury, Total (as Hg)	ng/L	SingleVal	8.7	12.0	4.8	5.6	0.8	1.5	0.5	1.9	1.2	<0.5	0.8	8.8	4.236
Molybdenum, Total (as Mo)	ug/L	SingleVal	17.9	20.2	26.7	29.6	23.9	28.3	26.7	57.8	22.1	43.6	37.8	32.3	30.575
Sodium, Total (as Na)	mg/L	SingleVal	317	525	351	1170	570	516	414	626	542	772	429	391	551.917
Solids, Total Dissolved (TDS)	mg/L	SingleVal	1680	2320	2180	3780	2220	2810	2590	3380	2440	3960	3130	2450	2,745.0
Specific Conductance	umh/cm	SingleVal	1720	3255	2819	4297	3220	3558	3167	4090	2754	4726	3695	3270	3,380.917
Sulfate, Total (as SO4)	mg/L	SingleVal	1120	1590	1480	2250	1320	870	1660	1890	1560	2530	1930	1610	1,650.833

Waste Stream Station WS004 (Influent fr Pit 1 to Tailings Filter #2)

<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	mgd	DailyAve	NoFlo	NoFlo	0	0	0	NoFlo	0	0	0	0	0	0	0.0
Mercury, Total (as Hg)	ng/L	SingleVal	0.6	1.2	<0.5	0.6	<0.5	0.6	0.6	<0.5	0.5	<0.5	<0.5	<0.5	0.683

Waste Stream Station WS005 (Spent Tailings Disposal)

<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>
Mass Transported From Facility	ton/mo	SingleVal	NoMat	NoMat	NoMat	NoMat	NoMat	NoMat	NoMat	NoMat	NoMat	NoMat	NoMat	NoMat	

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Waste Stream Station WS006 (Slag Disposal)

<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>
Mass Transported From Facility	ton/mo	SingleVal	NoMat	NoMat	NoMat	NoMat	NoMat	NoMat	NoMat	NoMat	NoMat	NoMat	NoMat	NoMat	

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