

## STATEMENT OF BASIS

**Applicant:** Homestake Mining Company  
**Permit Number:** SDP000119  
**Contact Person:** Todd Duex, General Manager, Closure  
Mark Tieszen, Environmental Manager  
11457 Bobtail Gulch Street  
Lead, SD 57754  
**Phone:** (605) 722-4875  
**Permit Type:** Pretreatment Industrial User – Renewal

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### DESCRIPTION

Homestake operates the Blacktail Water Treatment Facility, a water treatment facility located in Central City at 11457 Bobtail Gulch Street, in the Northeast ¼ of Section 28, Township 5 North, Range 3 East, in Lawrence County, South Dakota (Latitude 44.369266°, Longitude -103.758626°, map interpolation). Homestake also operates the Yates Water Treatment Facility located along the Kirk Road near Lead in the Southwest ¼ of Section 34, Township 5 North, Range 3 East, in Lawrence County, South Dakota (Latitude 44.351301°, Longitude -103.743376°, map interpolation).

Homestake operated a surface gold mining operation near the city of Lead, South Dakota until 2001. Gold was discovered at the Homestake Mine in 1876 on the North Fork of Gold Run Creek. The original claims were incorporated as holdings of the Homestake Mining Company in 1877. The original discovery of gold in the region included a small portion of the Homestake ore body outcrop. Through time, Homestake acquired the other mines along the trend of the ore body.

Both surface and underground mining methods were used to access the ore body. Surface mining resulted in what is now referred to as the "Open Cut." Homestake ceased surface mining in the Open Cut in 1945, and resumed in 1982 after receiving a state mine permit from the South Dakota Board of Minerals and Environment. Surface mining under the state mine permit ended in December 1999 and Homestake is now actively reclaiming the area. A significant portion of the facilities have been released from reclamation obligations under Homestake's state mining permit and the South Dakota Department of Environment and Natural Resources (SDDENR) has released the corresponding reclamation bond.

Flows in and around the site are now comprised primarily of storm water runoff and surfacing ground water. These waters are collected and piped to Homestake's Blacktail Waste Rock Seepage Treatment Plant. The collection system is covered under Homestake's surface water discharge permit, SD0025933.

The flows entering the treatment plant are split between any combination of the three multimedia filters at any one time, including running two while the third is being backwashed. A coagulant and antiscalant are added to the flow prior to entering the multimedia filters. Following the initial filtration, the flow is pumped to three reverse osmosis (RO) treatment units with small, medium, and large pump capacities. Because the water collected on Homestake's site is primarily storm

water, the flows vary seasonally. Each of the three RO units can be operated independently or simultaneously to provide a wide range of treatment capabilities.

The brine from the RO units is sent to the bioreactors for selenium removal. The RO permeate is combined with the treated flows from the bioreactors and discharged to Deadwood Creek (SD0025933 – Outfall 013). There are two trains of bioreactors. Each train of bioreactors has two parallel anaerobic units, followed by one aerobic unit. Molasses and nutrients are added as needed to enhance the treatment in the anaerobic units. After treatment in the anaerobic and aerobic units, the treated brine is sent to polishing filters and discharged to either the Lead-Deadwood Sanitary District (Outfall 001), returned to the feed pond for future treatment, or combined with RO permeate and discharged to Deadwood Creek (SD0025933 – Outfall 013). Carbon dioxide can be injected into the discharge flow to Deadwood Creek as necessary for pH adjustment.

Both sets of filters (multimedia and polishing filters) must be periodically backwashed to a spent backwash storage tank. The backwash from the multimedia filters can contain minor amounts of dirt and other debris. The backwash from the polishing filter can contain minor amounts of sludge. The backwash is sent to the Lead-Deadwood Sanitary District (Outfall 001).

Sludge produced from the bioreactors during draining and cleaning operations is normally pumped, to the extent practicable, to a large filter bag (i.e. Geotube) located within a lined containment area in Blacktail Gulch at the toe of the East Waste Rock Disposal Facility near the Blacktail Gulch seepage collection system. The sludge is dewatered in the Geotube. The dewatered solids are then tested (i.e. TCLP for RCRA metals) and subsequently transported to an offsite landfill for disposal. This material has consistently passed the TCLP tests. The liquids drained from the sludge flow into the Blacktail Feed Pond.

Minor quantities of sludge that cannot be effectively pumped remain in the bioreactors following the pumping operations. This remaining sludge is rinsed from the bioreactors and reports to the sump within the Blacktail Plant. The plant sump is then pumped into the backwash tank where it is comingled with backwash water from the multimedia and polish filters. Water from the backwash tank is stored and bled into the discharge to the POTW at rates of less than 10 gpm.

This plant has the capacity to treat an average flow of 250 gallons per minute (0.36 MGD) with a peak flow of 800 gallons per minute (1.15 MGD). The flow varies seasonally and annually.

The Yates Waste Rock wastewater treatment facility was built in response to Homestake noticing that pH and some metals concentrations from samples taken at the seepage collection system have fluctuated over time. That variability is believed to be due, in part, to heavy precipitation in and around the reclamation site. Homestake constructed the wastewater treatment system to manage any remnant post-construction seepage. The treatment system is designed to remove metals and regulate pH, and was upgraded starting at the end of 2011. The facility consists of a 100-gallon pH adjustment tank for adding sodium hydroxide, a 400-gallon aeration tank, and two settling basins in series. The decant from the second settling basin is discharged down a manhole with a connection to the Lead-Deadwood Sanitary District (Outfall 002). Settled solids are pumped through a manifold to a 0.7 cubic yard geotube. The manifold is valved to allow efficient filling and dewatering of geotubes on a rotating basis. Filtrate from the geotubes is returned to settling tank #1.

Because these facilities (i.e. Blacktail and Yates Water Treatment Plants combined) can discharge more than 25,000 gallons per day of process wastewater and contribute more than 5% of the organic and hydraulic capacity of the Publicly Owned Treatment Works (POTW), Homestake is a significant industrial user as defined in Title 40 of the Code of Federal Regulations (40 CFR), Part 403.3(t), and is being issued a Pretreatment Industrial User Permit under the Administrative Rules of South Dakota (ARSD), Sections 74:52:11:04.

## **RECEIVING POTW**

Wastewater that will be discharged under this permit will be conveyed by a municipal sewage collection system to the Lead-Deadwood Sanitary District POTW. The facility consists of a gravity flow collection system, aided by one area lift station that transports wastewater to a mechanical wastewater treatment facility (WWTF). The WWTF consists of the following processes: pretreatment; aeration; clarification; tertiary treatment; sand filters, disinfection; dechlorination; aerobic sludge digestion; and use of biosolids for mine reclamation.

Pretreatment at the facility consists of a mechanical bar screen, aerated grit removal, and flow monitoring by a Parshall flume. Grit and debris removed during the pretreatment processes are sent to the Belle Fourche Landfill.

From the pretreatment process, the wastewater flows into two 340,000-gallon aeration basins that are operated in parallel. From the aeration basins, the wastewater is directed to two 335,000-gallon square clarifiers. Return activated sludge is pumped from the bottom of the clarifiers to the aeration basins to maintain a high population of microorganisms. The waste activated sludge is pumped to the aerobic digestors.

Wastewater from the clarifiers can then be directed to the Rotating Biological Contactors (RBCs) for nitrification (tertiary treatment). This portion of the treatment system is used during periods of high loadings, which occur mainly in the summer during tourist season (usually about six months out of the year). Flow either from the clarifiers or the RBCs is routed to an equalization pond that is large enough to handle total daily flows of up to 7.0 MGD. Wastewater from the equalization pond is then chlorinated with chlorine gas and dechlorinated with sulfur dioxide before it is discharged into Whitewood Creek. Wastewater from the equalization basin can also go to two multimedia filters. The filter media consists of silica, sand, and anthracite coal. The filters have a surface area of 196 square feet and have a hydraulic capacity of 4 gpm per square foot.

Biosolids treatment consists of two aerobic digestors that have a storage capacity of 220,000 gallons each. The sanitary district also incorporates sludge from the USFS Box Elder Job Corp Civilian Conservation Center into the digestors. The digested sludge is used at Homestake Mining Company's Grizzly Gulch tailings impoundment for mine reclamation. The supernatant is returned to the aeration basins.

## **MONITORING DATA**

Homestake has been submitting Discharge Monitoring Reports (DMRs) as required under the current permit. As shown in Attachment 1, the Blacktail facility has had no violations under this permit during the current permit cycle. The Yates facility has had 1 violation of pH for Outfall 002 on May 26, 2011.

No future violations are expected. No discharge was reported for the monitoring periods not included in the table.

## **INSPECTIONS**

The most recent inspection of these facilities was conducted by SDDENR personnel on September 7, 2011. No deficiencies were noted during the inspection.

## **EFFLUENT LIMITS**

**Outfall 001** - Any discharge from the Blacktail Wastewater Treatment Plant to the Lead-Deadwood sanitary sewer system. (Latitude 44.369266°, Longitude -103.758626°, map interpolation).

**Outfall 002** - Any discharge from the Yates Waste Rock wastewater treatment system to the Lead-Deadwood Sanitary District's sanitary sewer (Latitude 44.351301°, Longitude -103.743376°, map interpolation).

The permittee shall comply with the effluent limits specified below. These limits are based on ARSD Chapters 74:52:10 and 74:52:11, which adopt 40 CFR Parts 403.5 (general and specific prohibitions) and 40 CFR Subchapter N (pretreatment standards) by reference, the hazardous waste regulations in 40 CFR 261.22(a)(1), and Best Professional Judgement (BPJ).

**The following limits and general prohibitions are applicable to the entire facility effluent:**

1. There shall be no discharge of pollutants that cause pass through or interference at the POTW. This limit is based on 40 CFR 403.5(a)(1).
2. There shall be no discharge of pollutants that create a fire or explosion hazard at the POTW, including, but not limited to, wastestreams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in ARSD Section 74:28:22:01 a.b.r. 40 CFR 261.21. This limit is based on 40 CFR 403.5(b).
3. There shall be no discharge of pollutants that will cause corrosive structural damage to the POTW, but in no case shall discharges be allowed with a pH lower than 5.5 standard units or greater than 12.5 standard units. This limit is based on 40 CFR 403.5(b) and 40 CFR 261.22(a)(1).
4. There shall be no discharge of solid or viscous pollutants in amounts that will cause obstruction to the flow in the POTW resulting in interference. This limit is based on 40 CFR 403.5(b).
5. There shall be no discharge of any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration that will cause interference with the POTW. This limit is based on 40 CFR 403.5(b).
6. There shall be no discharge of heat in amounts that will inhibit biological activity at the POTW resulting in interference, and in no case shall there be heat in such quantities that the

temperature at the POTW treatment plant exceeds 40°C (104°F) unless SDDENR, upon request of the POTW, approves alternate temperature limits. This limit is based on 40 CFR 403.5(b).

7. There shall be no discharge of petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through at the POTW. This limit is based on 40 CFR 403.5(b).
8. There shall be no discharge of pollutants that result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems. This limit is based on 40 CFR 403.5(b).
9. There shall be no discharge of any trucked or hauled pollutants, except at discharge points designated by the POTW. This limit is based on 40 CFR 403.5(b).
10. The total flow for both outfalls combined shall not exceed 500,000 gallons in any one day as a daily maximum. Flow values from both outfalls shall be combined and compared to this value to determine compliance. There shall be no discharge from the facilities to the POTW during time periods when the Lead-Deadwood Sanitary District is experiencing a combined sewer overflow event. This limit is based on the Lead-Deadwood Sanitary District POTW's average daily flow capacity, the expected wastewater flow from domestic sources and industrial sources, and BPJ.

Flow Rate (gallons per day – gpd), Total Suspended Solids (mg/L), Five-Day Biochemical Oxygen Demand (mg/L), Total Dissolved Solids (mg/L), Total Ammonia-Nitrogen (mg/L), Total Phosphate as P (mg/L), Total Arsenic (µg/L), Total Selenium (µg/L), and Total Copper (µg/L) shall be monitored, but will not have limits.

#### **SELF MONITORING REQUIREMENTS – OUTFALL 001**

As a minimum, upon the effective date of this permit, the following constituents shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. All samples shall be taken before the process generated wastewater effluent either joins or is diluted by any other dilution stream, water, or substance. Test procedures for the analysis of pollutants shall conform to those codified in ARSD Section 74:52:03:06, a.b.r. 40 CFR Part 136.

<b>Effluent Characteristic</b>	<b>Frequency<sup>1</sup></b>	<b>Reporting Values<sup>1</sup></b>	<b>Sample Type<sup>1</sup></b>
Total Facility Flow, gallons (Blacktail and Yates Facilities Combined)	Daily	Daily Total	Calculated
Flow Rate, gpd	Daily	Daily Maximum 30-Day Average	Continuous

<sup>1</sup> See Definitions section.

pH, standard units	Daily	Daily Minimum Daily Maximum	Instantaneous <sup>2</sup>
Total Suspended Solids (TSS), mg/L	Weekly	Daily Maximum 30-Day Average	24-Hour Composite
Total Dissolved Solids (TDS), mg/L	Weekly	Daily Maximum 30-Day Average	24-Hour Composite
Five-Day Biochemical Oxygen Demand (BOD <sub>5</sub> ), mg/L	Monthly	30-Day Average; Daily Maximum	24-Hour Composite
Nitrogen, ammonia total (as N) mg/L	Monthly	30-Day Average; Daily Maximum	24-Hour Composite
Phosphorus, total (as P), mg/L	Monthly	30-Day Average; Daily Maximum	24-Hour Composite
Total Arsenic, µg/L	Quarterly	Daily Maximum 30-Day Average	24-Hour Composite
Total Selenium, µg/L	Quarterly	Daily Maximum 30-Day Average	24-Hour Composite
Total Copper, µg/L	Quarterly	Daily Maximum 30-Day Average	24-Hour Composite

<sup>2</sup> pH shall be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment. Readings shall be reported to the nearest 0.1 standard units.

## SELF MONITORING REQUIREMENTS – OUTFALL 002

As a minimum, upon the effective date of this permit, the following constituents shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. All samples shall be taken before the process generated wastewater effluent either joins or is diluted by any other dilution stream, water, or substance. Test procedures for the analysis of pollutants shall conform to those codified in ARSD Section 74:52:03:06, a.b.r. 40 CFR Part 136.

Effluent Characteristic	Frequency <sup>1</sup>	Reporting Values <sup>1</sup>	Sample Type <sup>1</sup>
Flow Rate, gpd	Daily	Daily Maximum 30-Day Average	Continuous
pH, standard units	Monthly	Daily Minimum Daily Maximum	Continuous <sup>2</sup>
Total Suspended Solids (TSS), mg/L	Monthly	Daily Maximum 30-Day Average	Grab
Total Dissolved Solids (TDS), mg/L	Monthly	Daily Maximum 30-Day Average	Grab
Five-Day Biochemical Oxygen Demand (BOD <sub>5</sub> ), mg/L	Monthly	30-Day Average; Daily Maximum	Grab
Nitrogen, ammonia total (as N) mg/L	Monthly	30-Day Average; Daily Maximum	Grab
Phosphorus, total (as P), mg/L	Monthly	30-Day Average; Daily Maximum	Grab
Total Arsenic, µg/L	Quarterly	Daily Maximum 30-Day Average	Grab
Total Selenium, µg/L	Quarterly	Daily Maximum 30-Day Average	Grab
Total Copper, µg/L	Quarterly	Daily Maximum 30-Day Average	Grab

<sup>1</sup> See Definitions section.

<sup>2</sup> The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment. Readings shall be reported to the nearest 0.1 standard units.

A Discharge Monitoring Report (DMR) shall be submitted to SDDENR and the Lead-Deadwood Sanitary District **every month** for each outfall. DMRs shall be postmarked by the 28<sup>th</sup> day of the month following the completed reporting period.

If sampling and analysis indicates a violation of any pollutant limit, the permittee shall notify SDDENR within 24 hours of becoming aware of the violation in accordance with Section 2.8 of the permit (Twenty-four Hour Notice of Noncompliance Reporting), and repeat the sampling and analysis for that parameter within 30 days in accordance with Section 2.10 of the permit (Resampling Requirements).

## **STORM WATER**

Storm water discharges will be regulated under Homestake's surface water discharge permit, SD0025933. Storm water requirements will not be included in this permit, because they are included in the SD0025933 permit.

## **CATEGORICAL STANDARDS REOPENER PROVISION**

The pretreatment program relies on a pollution control strategy with three elements. These elements are the Categorical Standards, General Prohibitions, and Local Limits. Local limits and general prohibitions are contained in the permit to ensure the receiving POTW is protected. There are no categorical standards that apply to this facility. If they are developed, the permit will be reopened and modified to include the categorical standards.

## **ENDANGERED SPECIES**

The discharge regulated under this permit does not go directly to surface water, but rather to the POTW where it will receive further treatment. Therefore, it is not believed there will be any detrimental effects to endangered species.

## **PERMIT EXPIRATION**

A five-year permit is recommended.

## **PERMIT CONTACT**

Any questions pertaining to this statement of basis can be directed to Anthony Mueske, Natural Resources Project Engineer for the Surface Water Quality Program, at (605) 773-3351.

November 3, 2012



# **ATTACHMENT 1**

## **Discharge Monitoring Report Data**

# Outfall 001

DMR End Date	BOD, 5-day, 20 deg. C		Nitrogen, ammonia total (as N)		Phosphate, total (as P)		Arsenic, total (as As)		Copper, total (as Cu)		Flow		pH		Selenium, total (as Se)		Solids, total dissolved		Solids, total suspended	
	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	Daily Min	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max
Limit:	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A gal/d	500,000 gal/d	5.5 SU	12.5 SU	N/A ug/L	N/A ug/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L
11/30/2006	BD	BD	0.09	0.09	0.6	0.6	BD	BD	BD	BD	92,421	135,807	8.3	8.53	22	22	7,756	8,320	6.7	28.8
12/31/2006	BD	BD	BD	BD	0.59	0.59	5	5	BD	BD	100,713	115,255	8.39	8.74	19	19	7,202.5	7,330	4	10
01/31/2007	3	3	0.42	0.42	0.92	0.92	NR	NR	NR	NR	111,358	119,340	8.29	8.57	20	20	7,396	7,600	BD	5.2
02/28/2007	3	3	0.05	0.05	1.3	1.3	5	5	5	5	105,487	118,610	8.35	8.55	18	18	7,647.5	7,740	5	5
03/31/2007	3	3	0.05	0.05	0.26	0.26	NR	NR	NR	NR	122,988	151,753	8.3	8.48	17	17	9,007.5	11,300	5	17.6
04/30/2007	3	3	0.13	0.13	2.01	2.01	5	5	5	5	112,265	150,945	8.2	8.48	13	13	9,878	11,400	7.4	20.8
05/31/2007	3	3	0.05	0.05	0.84	0.84	NR	NR	NR	NR	93,433	122,067	8.25	8.5	7	7	10,625	11,400	8.9	12
06/30/2007	3	3	0.05	0.05	0.55	0.55	NR	NR	NR	NR	129,324	164,967	7.81	8.46	12	12	12,685	15,500	35	63.2
07/31/2007	14	14	0.1	0.1	2.84	2.84	16	16	9	9	146,291	184,019	7.3	8.34	22	22	14,160	16,700	49	156
08/31/2007	3	3	0.05	0.05	0.94	0.94	NR	NR	NR	NR	129,794	175,240	8.11	8.41	17	17	12,900	13,900	13.5	15.6
09/30/2007	3	3	0.05	0.05	0.76	0.76	NR	NR	NR	NR	89,040	125,732	8.31	8.5	25	25	13,140	15,500	19.1	42.7
10/31/2007	3	3	0.05	0.05	0.86	0.86	5	5	5	5	80,565	114,614	8.29	8.51	29	29	13,875	14,700	15.2	24.8
11/30/2007	3	3	0.05	0.05	0.97	0.97	NR	NR	NR	NR	71,717	113,145	8.4	8.56	26	26	15,650	16,200	6.9	7.6
12/31/2007	3	3	0.05	0.05	1.1	1.1	NR	NR	NR	NR	65,949	88,368	8.38	8.57	26	26	15,280	15,800	20.3	43
01/31/2008	3	3	0.05	0.05	0.91	0.91	5	5	5	5	51,974	60,844	7.89	8.58	25	25	15,000	16,000	16.3	45.6
02/29/2008	3	3	0.05	0.05	0.96	0.96	NR	NR	NR	NR	52,091	59,817	8.41	8.55	33	33	15,850	16,300	15.8	33
03/31/2008	3	3	0.31	0.31	2.75	2.75	NR	NR	NR	NR	56,587	76,494	8.36	8.53	24	24	14,720	16,000	20	51
04/30/2008	3	3	0.05	0.05	1.29	1.29	5	5	5	5	85,944	135,152	7.89	8.47	17	17	10,605	14,800	28.8	63
05/31/2008	3	3	0.05	0.05	0.82	0.82	NR	NR	NR	NR	156,663	198,143	8.06	8.32	23	23	10,275	11,200	38.4	61
06/30/2008	3	3	0.05	0.05	1.12	1.12	NR	NR	NR	NR	193,800	299,303	7.88	8.2	NR	NR	11,760	12,900	41.6	62
07/31/2008	3	3	0.05	0.05	1	1	5	5	5	5	210,372	235,890	8.03	8.18	26	26	11,125	11,600	34.4	65
08/31/2008	3	3	0.05	0.05	0.98	0.98	NR	NR	NR	NR	137,841	209,485	8.08	8.31	30	30	13,825	16,700	28	72
09/30/2008	3	3	0.05	0.05	1.19	1.19	NR	NR	NR	NR	98,206	266,013	7.59	8.39	23	23	15,500	16,500	15.9	49
10/31/2008	3	3	0.05	0.05	0.98	0.98	11	11	7	7	89,251	119,589	8.18	8.41	44	44	14,625	14,900	12.1	15.2

DMR End Date	BOD, 5-day, 20 deg. C		Nitrogen, ammonia total (as N)		Phosphate, total (as P)		Arsenic, total (as As)		Copper, total (as Cu)		Flow		pH		Selenium, total (as Se)		Solids, total dissolved		Solids, total suspended	
	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	Daily Min	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max
Limit:	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A gal/d	500,000 gal/d	5.5 SU	12.5 SU	N/A ug/L	N/A ug/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L
11/30/2008	3	3	0.05	0.05	1.18	1.18	NR	NR	NR	NR	93,091	120,955	8.16	8.43	27	27	14,480	15,500	10	22
12/31/2008	3.1	3.1	0.09	0.09	2.56	2.56	NR	NR	NR	NR	80,237	114,677	8.22	8.49	33	33	14,875	15,100	11.5	39.6
01/31/2009	3	3	0.05	0.05	0.11	0.11	6	6	5	5	72,238	111,421	8.28	8.53	24	24	14,200	15,300	9.8	16
02/28/2009	10	10	0.05	0.05	1.29	1.29	NR	NR	NR	NR	71,442	115,595	8.29	8.5	30	30	14,725	15,200	15.1	27.2
03/31/2009	3	3	0.05	0.05	0.92	0.92	NR	NR	NR	NR	108,934	184,086	8.32	8.5	NR	NR	12,090	15,800	8	14.8
04/30/2009	3	3	0.05	0.05	1.07	1.07	6	6	5	5	125,235	180,701	8.25	8.44	28	28	13,475	15,100	21.8	49.5
05/31/2009	3	3	0.05	0.05	0.96	0.96	NR	NR	NR	NR	141,973	227,991	8.14	8.36	NR	NR	14,760	15,700	19.7	38
06/30/2009	3	3	0.05	0.05	1.44	1.44	NR	NR	NR	NR	91,523	154,598	8.24	8.45	NR	NR	14,350	15,600	21.1	28.4
07/31/2009	3	3	0.05	0.05	1.22	1.22	10	10	6	6	95,820	132,142	8.24	8.41	37	37	15,050	15,700	19.3	31
08/31/2009	3	3	0.05	0.05	1.62	2.19	NR	NR	NR	NR	88,885	182,222	8.21	8.43	31	44	15,340	16,000	10.6	10.6
09/30/2009	3	3	0.05	0.05	2.12	2.12	NR	NR	NR	NR	73,150	101,155	8.31	8.49	40	40	15,950	16,200	7.2	9.2
10/31/2009	3	3	0.05	0.05	1.27	1.27	5	5	5	5	66,850	95,492	8.36	8.49	32	32	15,175	15,400	13.8	32
11/30/2009	3	3	0.05	0.05	1.17	1.17	NR	NR	NR	NR	70,283	105,807	8.31	8.53	41	41	15,080	15,700	9.6	20
12/31/2009	BD	BD	BD	BD	1.42	1.42	NR	NR	NR	NR	61,674	98,071	8.36	8.53	26	26	15,025	15,300	12.5	21.6
01/31/2010	BD	BD	BD	BD	1.36	1.36	BD	BD	BD	BD	58,384	82,163	8.33	8.53	28	28	14,940	15,200	6.2	7.2
02/28/2010	BD	BD	BD	BD	1.12	1.12	NR	NR	NR	NR	57,155	112,249	8.28	8.52	33	33	13,672.5	15,900	5.6	7.2
03/31/2010	BD	BD	BD	BD	1.54	1.54	NR	NR	NR	NR	73,544	133,925	8.12	8.5	46	46	14,600	15,500	7.3	10.8
04/30/2010	BD	BD	BD	BD	0.67	0.67	25	25	10	10	126,262	193,168	8.16	8.4	37	37	11,447.5	14,100	46.9	69.5
05/31/2010	3	3	0.05	0.05	0.59	0.59	NS	NS	NS	NS	149,392	205,347	7.64	8.4	34	34	12,320	14,100	21	26
06/30/2010	BD	BD	0.1	0.1	2.9	2.9	NR	NR	NR	NR	143,786	159,555	8.03	8.6	32	32	13,375	14,000	24.8	54.4
07/31/2010	BD	BD	BD	BD	0.73	0.73	BD	BD	BD	BD	143,186	173,058	8.12	8.31	32	32	13,525	14,100	11	15.6
08/31/2010	4.4	4.4	BD	BD	0.37	0.37	NR	NR	NR	NR	130,537	159,741	7.9	8.36	35	35	13,900	13,900	22.5	38.8
09/30/2010	3.8	3.8	BD	BD	0.47	0.47	NR	NR	NR	NR	121,498	165,384	8.13	8.41	28	28	13,800	14,100	24	24
10/31/2010	3.9	3.9	0.24	0.24	2.68	2.68	NR	NR	NR	NR	137,440	156,472	8.04	8.23	41	41	13,325	14,100	39.4	85.5
11/30/2010	3.9	3.9	BD	BD	BD	BD	0.42	0.42	BD	BD	138,165	175,474	8.09	8.22	BD	BD	33	33	18	23.2
12/31/2010	3.2	3.2	BD	BD	0.24	0.24	NR	NR	NR	NR	81,061	101,911	8	8.37	24	24	14,500	15,000	18.3	27.5

DMR End Date	BOD, 5-day, 20 deg. C		Nitrogen, ammonia total (as N)		Phosphate, total (as P)		Arsenic, total (as As)		Copper, total (as Cu)		Flow		pH		Selenium, total (as Se)		Solids, total dissolved		Solids, total suspended	
	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	Daily Min	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max
Limit:	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A gal/d	500,000 gal/d	5.5 SU	12.5 SU	N/A ug/L	N/A ug/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L
01/31/2011	5	5	BD	BD	1.15	1.15	130	130	8	8	75,789	94,091	8.08	8.37	14	14	14,280	15,000	17.8	43.5
02/28/2011	3.6	3.6	BD	BD	0.6	0.6	NR	NR	NR	NR	75,497	116,126	7.97	8.4	34	34	14,750	15,200	12	19.2
03/31/2011	6.1	6.1	BD	BD	BD	BD	0.51	0.51	NR	NR	112,487	167,593	8.13	8.34	NR	NR	30	30	18.2	26.7
04/30/2011	8	8	BD	BD	0.89	0.89	16	16	6	6	148,581	187,798	8.07	8.32	26	26	13,175	14,900	32.6	67.2
05/31/2011	9.3	9.3	0.05	0.05	0.72	0.72	NR	NR	NR	NR	177,791	218,973	8.03	8.6	28	28	10,960	11,900	39.6	88
06/30/2011	BD	BD	BD	BD	0.44	0.44	NR	NR	NR	NR	165,207	197,095	7.94	8.42	38	38	13,100	13,600	14.7	19.2
07/31/2011	BD	BD	BD	BD	0.32	0.32	9	9	BD	BD	161,957	193,779	7.99	8.32	30	30	13,240	14,600	26.7	45.9
08/31/2011	BD	BD	BD	BD	0.45	0.45	NR	NR	NR	NR	116,649	145,749	8.1	8.32	37	37	15,100	15,500	16.7	36
09/30/2011	BD	BD	BD	BD	0.23	0.23	NR	NR	NR	NR	106,737	137,937	8.07	8.22	21	21	14,975	15,400	5.2	9.6
10/31/2011	BD	BD	BD	BD	0.15	0.15	BD	BD	BD	BD	93,739	126,720	8.08	8.5	29	29	14,575	14,800	10.8	19.2
11/30/2011	BD	BD	BD	BD	0.61	0.61	NR	NR	NR	NR	88,623	108,188	8.32	8.56	31	31	14,620	15,200	13.9	22
12/31/2011	BD	BD	BD	BD	0.65	0.65	NR	NR	NR	NR	78,114	108,059	8.24	8.62	35	35	14,850	15,300	8.3	14
01/31/2012	BD	BD	BD	BD	0.56	0.56	6	6	BD	BD	73,839	101,763	8.22	8.44	30	30	15,200	16,000	5.8	7.6
02/29/2012	BD	BD	BD	BD	1	1	NR	NR	NR	NR	66,511	74,392	8.34	8.58	30	30	14,950	15,500	BD	10
03/31/2012	BD	BD	BD	BD	0.05	0.05	NR	NR	NR	NR	76,525	128,142	8.02	8.54	36	36	13,300	14,300	42.8	76
04/30/2012	BD	BD	BD	BD	0.73	0.73	7	7	BD	BD	68,382	92,449	8.3	8.59	28	28	13,920	14,700	25.8	44
05/31/2012	BD	BD	BD	BD	0.54	0.54	NR	NR	NR	NR	68,071	97,012	8.39	8.59	40	40	13,900	14,200	31.7	54
06/30/2012	BD	BD	BD	BD	0.69	0.69	NR	NR	NR	NR	63,789	82,301	8.38	8.52	36	36	13,600	15,200	35.8	82
07/31/2012	BD	BD	BD	BD	0.78	0.78	BD	BD	BD	BD	46,669	75,709	8.41	8.6	43	43	14,280	14,900	14	22.4
08/31/2012	BD	BD	BD	BD	0.66	0.66	NR	NR	NR	NR	56,216	94,331	8.38	8.6	34	34	14,625	15,900	13.8	28.4

# Outfall 002

DMR End Date	Arsenic, total (as As)		BOD, 5-day, 20 deg. C		Copper, total (as Cu)		Flow		Nitrogen, ammonia total (as N)		pH		Phosphate, total (as P)		Selenium, total (as Se)		Solids, total dissolved		Solids, total suspended	
	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	Daily Min	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max		
Limit:	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A gal/d	N/A gal/d	N/A mg/L	N/A mg/L	5.5 SU	12.5 SU	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L
07/31/2009	5	5	3	3	15	15	8,269	18,100	0.05	0.05	6.31	9.27	0.01	0.01	5	5	5,680	5,680	6	6
08/31/2009	NR	NR	3	3	NR	NR	1,802	4,909	0.05	0.05	7.31	8.91	0.01	0.01	NR	NR	4,720	4,720	5	5
09/30/2009	NR	NR	3	3	NR	NR	73,150	101,155	0.05	0.05	8.31	8.49	2.12	2.12	40	40	15,950	16,200	7.2	9.2
10/31/2009	5	5	3	3	6	6	6,465	9,835	0.05	0.05	7.88	9	0.01	0.01	5	5	2,830	2,830	5	5
11/30/2009	NR	NR	3	3	NR	NR	5,828	17,816	0.05	0.05	7.25	9.78	0.01	0.01	NR	NR	3,330	3,330	5	5
12/31/2009	NR	NR	BD	BD	NR	NR	6,185	12,058	BD	BD	7.84	8.73	BD	BD	NR	NR	3,600	3,600	BD	BD
01/31/2010	BD	BD	BD	BD	8	8	3,620	6,075	BD	BD	7.72	9.06	BD	BD	BD	BD	3,380	3,380	BD	BD
02/28/2010	NR	NR	BD	BD	NR	NR	4,433	8,152	BD	BD	6.68	8.66	0.01	0.01	NR	NR	8,240	8,240	BD	BD
03/31/2010	NR	NR	BD	BD	NR	NR	7,869	15,450	BD	BD	6.6	8.69	BD	BD	NR	NR	3,340	3,340	2,760	2,760
04/30/2010	NR	NR	BD	BD	NR	NR	11,130	18,832	BD	BD	6	9.09	BD	BD	NR	NR	5,715	6,130	3,022.6	6,040
05/31/2010	5	5	5.3	5.3	145	145	20,140	35,288	0.09	0.09	5.69	8.93	0.01	0.01	6	6	7,560	7,560	104	104
06/30/2010	NR	NR	5.9	5.9	NR	NR	22,395	41,445	BD	BD	7.22	8.93	BD	BD	NR	NR	5,500	5,500	29	29
07/31/2010	NR	NR	18	18	NR	NR	22,413	45,889	0.09	0.09	7.2	8.87	0.01	0.01	NR	NR	6,810	6,810	39.6	39.6
08/31/2010	NR	NR	26	26	NR	NR	3,297	10,025	0.14	0.14	7.86	8.52	BD	BD	NR	NR	5,980	5,980	51.6	51.6
09/30/2010	BD	BD	37	37	47	47	5,579	10,386	0.67	0.67	8.05	8.79	0.02	0.02	6	6	5,870	5,870	30	30
10/31/2010	NR	NR	19	19	NR	NR	11,799	29,114	0.28	0.28	7.61	8.92	0.02	0.02	NR	NR	4,350	4,350	28.4	28.4
11/30/2010	BD	BD	29	29	41	41	12,651	21,241	0.2	0.2	7.67	8.87	NS	NS	0	BD	4,820	4,820	114	114
12/31/2010	NR	NR	72	72	NR	NR	13,142	23,720	1.55	1.55	7.69	7.69	0.01	0.01	NR	NR	4,820	4,820	42	42
01/31/2011	BD	BD	BD	BD	32	32	13,442	36,137	0.32	0.32	7.45	8.89	0.01	0.01	0	BD	4,130	4,130	66	66
02/28/2011	NR	NR	3.8	3.8	NR	NR	15,339	39,278	0.08	0.08	6.39	8.9	BD	BD	NR	NR	6,370	6,370	272	272
03/31/2011	NR	NR	BD	BD	NR	NR	13,779	39,729	0.05	0.05	7.03	9.4	BD	BD	NR	NR	3,620	3,620	34.8	34.8
04/30/2011	NR	NR	BD	BD	NR	NR	11,989	25,959	BD	BD	6.98	8.59	0.01	0.01	NR	NR	4,810	4,810	6.4	6.4
05/31/2011	BD	BD	3.9	3.9	39	39	10,800	28,965	0.05	0.05	4.24	8.96	BD	BD	0	BD	4,240	4,240	23.2	23.2
06/30/2011	NR	NR	5.6	5.6	NR	NR	16,989	49,732	0.11	0.11	7.33	8.26	0.01	0.01	NR	NR	11,100	11,100	50.4	50.4

DMR End Date	Arsenic, total (as As)		BOD, 5-day, 20 deg. C		Copper, total (as Cu)		Flow		Nitrogen, ammonia total (as N)		pH		Phosphate, total (as P)		Selenium, total (as Se)		Solids, total dissolved		Solids, total suspended	
	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	Daily Min	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max	30 Day Avg	Daily Max
Limit:	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A gal/d	N/A gal/d	N/A mg/L	N/A mg/L	5.5 SU	12.5 SU	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L	N/A mg/L
07/31/2011	NR	NR	3	3	NR	NR	23,707	40,146	0.14	0.14	7.31	8.25	BD	BD	NR	NR	8,470	8,470	54.4	54.4
08/31/2011	BD	BD	6.9	6.9	38	38	15,915	31,692	0.24	0.24	7.32	7.9	0.02	0.02	BD	BD	8,300	8,300	24.4	24.4
09/30/2011	NR	NR	BD	BD	NR	NR	9,453	21,197	0.44	0.44	7.23	7.87	0.01	0.01	NR	NR	8,010	8,010	20.4	20.4
10/31/2011	NR	NR	4.5	4.5	NR	NR	9,407	20,795	0.4	0.4	7.23	7.85	0.02	0.02	NR	NR	7,760	7,760	14	14
11/30/2011	NR	NR	4.5	4.5	NR	NR	11,243	21,694	0.54	0.54	6.87	7.96	0.04	0.04	NR	NR	7,580	7,580	24	24
12/31/2011	BD	BD	7.2	7.2	32	32	11,580	24,840	0.57	0.57	7.22	8.11	0.01	0.01	6	6	7,120	7,120	80	80
01/31/2012	NR	NR	4.3	4.3	NR	NR	15,486	35,882	1.15	1.15	7.2	9.15	0.02	0.02	NR	NR	6,280	6,280	11.2	11.2
02/29/2012	BD	BD	BD	BD	24	24	3,954	8,718	0.75	0.75	7.35	8.92	0.04	0.04	BD	BD	5,680	5,680	13.6	13.6
03/31/2012	NR	NR	4.1	4.1	NR	NR	1,737	4,522	BD	BD	7.04	8.39	BD	BD	NR	NR	2,760	2,760	BD	BD
04/30/2012	NR	NR	BD	BD	NR	NR	783	1,744	BD	BD	6.92	8	0.01	0.01	NR	NR	4,000	4,000	BD	BD
05/31/2012	BD	BD	BD	BD	7	7	781	1,014	BD	BD	7.65	8.05	0.02	0.02	BD	BD	3,700	3,700	BD	BD
06/30/2012	NR	NR	BD	BD	NR	NR	485	610	BD	BD	7.69	8.31	BD	BD	NR	NR	3,810	3,810	9.2	9.2
07/31/2012	NR	NR	BD	BD	NR	NR	365	446	BD	BD	7.61	8.25	BD	BD	NR	NR	4,540	4,540	BD	BD
08/31/2012	BD	BD	BD	BD	17	17	324	395	0.1	0.1	7.23	8.18	0.02	0.02	BD	BD	4,770	4,770	BD	BD

BD is Below Detection. Pollutant concentrations were too small to be measured.  
NR is Not Required. No sample was required for this parameter during the monitoring period.  
NS is No Sample. No sample is available for these parameters.