

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
FACT SHEET
(pursuant to NAC 445A.236)

Permittee Name: Titanium Metals Corporation
181 North Water Street
Black Mountain Industrial Park
Henderson, NV 89015

Mailing Address:
PO Box 2128
Henderson, NV 89009

Permit Number: NEV2000510

Location: BMI Complex
Henderson, Clark County
Section 12, Township 22 South, Range 62 East, MDB&M

Latitude: 36° 02' 44.0" N
Longitude: 114° 59' 36.8" W

Corrective Actions Sites:

There are several Bureau of Corrective Actions (BCA) remediation sites located within a one-mile radius of the permitted facility. TIMET is working with BCA to remediate the site.

Well Head and Drinking Water Supply Protection:

This facility is not within an established wellhead protection zone. The facility is not within a 6,000 foot buffer of any public water supply, nor within an established Wellhead Protection Area (WPA) or capture zone.

General:

Titanium Metals Corporation (TIMET) manufactures titanium metal ingots from titanium dioxide (rutile ore) by a series of chemical processes that include chlorination, purification, magnesium recovery, vacuum distillation, and final melting. In 2005, TIMET incorporated a treatment system for process effluent streams, known as the Water Conservation Facility (WCF). The WCF treats the process waste streams from the production of Titanium metal and Titanium Tetrachloride (TiCl₄) by neutralization, precipitation, clarification, and filtration. The process waste streams treated in the WCF are the Spent Caustic stream, the Continuous Sludge Dryer (CSD) stream, and the Other Process Water (OPW) stream. The Permittee has requested during the permit renewal process that the OPW stream include fluids derived from groundwater monitoring and remediation activities. The clarified and filtered liquid is then treated by reverse osmosis (R/O) to achieve a high-quality effluent that is discharged to the Las Vegas Wash, and is managed and limited under National Pollution Discharge Elimination System (NPDES) permit NV0000060. The R/O concentrate stream produced in the WCF is managed onsite under this permit NEV2000510, which remains a zero-discharge permit. The R/O concentrate stream produced in the reverse osmosis treatment step

(0.086 MGD) is contained in two HDPE-lined, leak-detected ponds, HP-1 and HP-6, and is evaporated under ambient conditions. The filtered solids produced (approximately 25 tons/day) are transported in a leak-proof container, held within double containment, and are shipped to an approved disposal or treatment site. All of the WCF facilities are located within the boundaries of the TIMET property address above.

The two evaporation ponds, HP-1 and HP-6, have the capacity of 2.2 million and 1.4 million cubic feet, respectively. It is anticipated that the two ponds have an operational life of approximately 10 years, based on average annual evaporation rates, before removal of evaporated salts is required.

In the application for permit modification, the Permittee identified two possible scenarios in which the WCF would be bypassed. In the first scenario, the OPW stream would be routed around the WCF and discharged to the evaporation ponds after neutralization with caustic material in the HP-1 discharge vault. This "upset" condition would result in daily flow of 155,400 gallons per day (0.16 MGD). In the second scenario, any or all of the process streams would be diverted to the ponds after neutralization within the plant. This would result in both liquids and precipitated solids being discharged to the ponds at a rate of up to 248,960 gallons per day. Either of these upset conditions may significantly decrease the operational life of the ponds, due to the increased flow rates and the higher rates of solids accumulation. The permit includes monitoring and reporting of any solids removed from the ponds.

Receiving Water Characteristics:

This is a zero discharge permit. However, should a discharge occur, the potential receiving water is groundwater, the surface of which is about 33 to 43 feet below ground surface. Groundwater monitoring was initiated previously in response to historical industrial impacts at this site. BCA administers on-going impacted groundwater related activities at the site. Selected existing wells will be utilized to monitor relative groundwater quality conditions up-gradient and down-gradient of the WCF.

Flow:

For the purposes of assigning a fee category, the Division used the design capacity of the R/O systems. The design capacity of the facility is 0.47 MGD.

Procedures for Public Comment:

The Notice of the Division's intent to issue a permit authorizing the facility to operate in such a way as to meet zero discharge standards of performance, subject to the conditions contained within the permit, is being sent to the **Las Vegas Review-Journal** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator. **All comments must be received by NDEP by 5:00 pm, MMM DD, 2009.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determined to be appropriate. All public

hearings must be conducted to accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Effluent Limitations and Monitoring Requirements:

Effluent and Pond Monitoring

NDEP proposes the effluent limitations, and monitoring requirements listed below:

- a. **Flow:**
Flow of clarified process fluid shall be monitored on a continuous basis at the head of the R/O treatment systems, to ensure that the capacity of the system is not exceeded. In the event of upset conditions, the flow of process wastes to the ponds will be monitored according to Item (d) below.
- b. **Pond Fluid:**
R/O concentrate fluid contained in the ponds HP-1 and HP-6 shall be sampled quarterly for the following constituents: Sulfate, Chloride, Total Dissolved Solids, Nitrate as N, Total Nitrogen, and pH. On an annual basis, the ponds shall be monitored for all analytes listed in Table 1.A.1.
- c. **Leak Detection Sumps:**
Leak detection sumps for ponds HP-1 and HP-6 shall be inspected monthly for accumulation of fluid. Should fluid be detected in either sump, it must be evacuated, the volume removed recorded, and a sample collected for analysis in accordance with the requirements in the footnotes to Table I.A.1. If it is determined that the accumulated fluid is from leakage of WCF waste water, the pond must immediately be taken out of service until the leak is located and repaired.
- d. **Upset Conditions:**
In the event of the occurrence of either upset condition described above, samples of the upset flow discharge to the ponds shall be taken and analyzed for all analytes listed in Table I.A.1. For each upset occurrence, a report detailing the reasons for, volume and duration of the upset, the corrective actions taken to avoid future upset, and the monitoring results shall be submitted with the quarterly monitoring report to the NDEP Compliance Coordinator at the address listed in the Permit.

**Table 1.A.1.
Wastewater Neutralization Plant Limitations and Monitoring Requirements**

PARAMETER	LIMITATIONS	MONITORING REQUIREMENTS	
		Measurement Frequency	Sample Type
Daily Maximum Process Flow (MGD)	0.46	Continuous	Calculate
Leak Detection Sumps ⁽¹⁾ Pond HP-1 Pond HP-6	Monitor & Report Monitor & Report	Monthly ⁽²⁾ Monthly ⁽²⁾	Visual Inspection; Evacuation
Sulfate (mg/L)	Monitor & Report	Quarterly	Discrete
Chloride (mg/L)	Monitor & Report	Quarterly	Discrete
Total Dissolved Solids (mg/L)	Monitor & Report	Quarterly	Discrete
Nitrate as N (mg/L)	Monitor & Report	Quarterly	Discrete
Total Nitrogen as N (mg/L)	Monitor & Report	Quarterly	Discrete
pH (Standard Units)	Monitor & Report	Quarterly	Discrete
Aluminum (mg/L)	Monitor & Report	Annually	Discrete
Arsenic (mg/L)	Monitor & Report	Annually	Discrete
Barium (mg/L)	Monitor & Report	Annually	Discrete
Cadmium (mg/L)	Monitor & Report	Annually	Discrete
Chromium (mg/L)	Monitor & Report	Annually	Discrete
Copper (mg/L)	Monitor & Report	Annually	Discrete
Iron (mg/L)	Monitor & Report	Annually	Discrete
Lead (mg/L)	Monitor & Report	Annually	Discrete
Manganese (mg/L)	Monitor & Report	Annually	Discrete
Molybdenum (mg/L)	Monitor & Report	Annually	Discrete
Nickel (mg/L)	Monitor & Report	Annually	Discrete
Selenium (mg/L)	Monitor & Report	Annually	Discrete
Silver (mg/L)	Monitor & Report	Annually	Discrete
Strontium (mg/L)	Monitor & Report	Annually	Discrete
Titanium (mg/L)	Monitor & Report	Annually	Discrete
Zinc (mg/L)	Monitor & Report	Annually	Discrete
Total Uranium (µg/L)	Monitor & Report	Annually	Discrete
Vanadium (µg/L)	Monitor & Report	Annually	Discrete
Gross Alpha (pCi/L)	Monitor & Report	Annually	Discrete
Gross Beta (mrem/yr)	Monitor & Report	Annually	Discrete
Perchlorate (µg/L)	Monitor & Report	Annually	Discrete
Carbon Tetrachloride (µg/L)	Monitor & Report	Annually	Discrete
Chloroform (µg/L)	Monitor & Report	Annually	Discrete
Tetrachloroethene (PCE) (µg/L)	Monitor & Report	Annually	Discrete
Trichloroethene (TCE) (µg/L)	Monitor & Report	Annually	Discrete

Footnotes:

- (1.) Leak detection sumps for evaporation ponds HP-1 and HP-6 shall be inspected monthly for accumulation of fluid. Should fluid be detected in either sump, it must be evacuated, the volume removed recorded, and a sample collected for analysis in accordance with the following parameters: Sulfate, TDS, Total Nitrogen,

and pH. If it is determined that the accumulated fluid is from leakage of WCF waste water, the pond must immediately be taken out of service until the source of the leakage is identified and repaired.

- (2.) Monthly sump inspection logs shall be submitted with each quarterly monitoring report.

Groundwater Monitoring Wells

Groundwater monitoring for the WCF is required in six wells; specifically, CLD1-R, CLD3-R, CLD4-R, J2U2, J2D4 and MW-6R. Results of groundwater monitoring shall be submitted to the NDEP Compliance Coordinator on appropriate Discharge Monitoring Report (DMR) Forms. Monitored constituents include:

**Table 2
 Groundwater Monitoring Limitations and Monitoring Requirements**

PARAMETER	PERMIT LIMITATION	FREQUENCY	SAMPLE TYPE
Depth to Groundwater (feet)	Monitor & Report	Semi-Annually	Field Measurement
Groundwater Elevation (feet AMSL)	Monitor & Report	Semi-Annually	Calculate
Nitrate as N (mg/L)	Monitor & Report	Semi-Annually	Discrete
Total Nitrogen as N (mg/L)	Monitor & Report	Semi-Annually	Discrete
Chromium (mg/L)	Monitor & Report	Semi-Annually	Discrete
Chloride (mg/L)	Monitor & Report	Semi-Annually	Discrete
Total Dissolved Solids (mg/L)	Monitor & Report	Semi-Annually	Discrete
pH (Standard Units)	Monitor & Report	Semi-Annually	Discrete

Solids Storage Area

The area in which the filtered solids are contained shall be inspected monthly for integrity, and any signs of leakage from the containers shall immediately be repaired, and any adjacent impacted soil removed to containment. Any accumulated storm water shall be evacuated and either discharged directly to the evaporation ponds or to the WCF for treatment. A bound log of monthly inspections shall be maintained onsite.

Schedule of Compliance:

The Permittee shall implement and comply with the provisions of the schedule of compliance of the permit as they apply, after approval by the Administrator, including in said implementation and compliance, any additions or modifications that the Administrator may make in approving the schedule of compliance.

Special Conditions:

Numerous special conditions are in place within this permit. Please refer to the permit for further details.

Rationale for Permit Requirements:

Monitoring is required to verify that the facility meets zero discharge standards of performance.

Proposed Determination:

The Division has made the tentative determination to renew the permit for five-year permit period, subject to permit requirements.

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Bureau of Water Pollution Control
May, 2009

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