



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
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JUN 29 2016

Mr. Peter Cawlfeld
Reserve Silica Corporation
P.O. Box 99
Ravensdale, WA 98051-0099

Notice of Violation (NOV) No.	13465
Site Name	Reserve Silica Corporation
Permit Number	Sand and Gravel General Permit No. WAG503029
Site Location	26000 Black Diamond & Ravensdale RD, Ravensdale, WA 98051

Re: Notice of Violation

Dear Mr. Cawlfeld:

The Department of Ecology is issuing the enclosed Notice of Violation to Reserve Silica Corporation for causing high pH water to leach out of the mine area and into the infiltration pond at pH levels in excess of permit limits and at levels high enough to cause violations of the pH standards set in Chapter 173-200 Washington Administrative Code (WAC), Water Quality Standards for Ground Water. The leachate has pH levels high enough to potentially cause physical harm to people who contact the caustic discharge. This Notice of Violation is issued under the authority of Revised Code of Washington 90.48.120(1).

All questions in response to this document should be directed to Chris Martin at (425) 649-7110 or cmar461@ecy.wa.gov.

Sincerely,

Kevin C. Fitzpatrick
Water Quality Section Manager

Enclosure: Notice of Violation No. 13465

By Registered Mail No.: RB 336 146 915 US

cc: Washington State Sand and Gravel General Permit No. WAG503029, Reserve Silica Corporation
Jerome Cruz, Ecology
Chris Martin, Ecology
Dan Dhillon, King County Department of Health
Madeline Wall, Ecology



**STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY**

IN THE MATTER OF COMPLIANCE)
BY RESERVE SILICA CORPORATION) NOTICE OF VIOLATION
WITH CHAPTER 90.48 RCW AND THE) DOCKET NO. 13465
RULES AND REGULATIONS OF)
THE DEPARTMENT OF ECOLOGY)

To: Mr. Peter Cawlfild
Reserve Silica Corporation
P.O. Box 99
Ravensdale, WA 98051-0099

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Permit Number	Sand and Gravel General Permit No. WAG503029
Site Location	26000 Black Diamond & Ravensdale RD, Ravensdale, WA 98051

The Department of Ecology (Ecology) is issuing this Notice of Violation to you for violating provisions of Chapter 90.48 Revised Code of Washington (RCW) Water Pollution Control. This notice contains Ecology's determination that a violation has or will occur.

Ecology has the authority to issue this Notice of Violation under RCW 90.48.120(1) which reads in part:

“Whenever, in the opinion of Ecology, any person shall violate or create a substantial potential to violate the provisions of the chapter, or fails to control the polluting content of waste discharged, or to be discharged into any waters of the state the department shall notify such person of its determination by registered mail...”

PROJECT/SITE LOCATION

Reserve Silica Corporation (Reserve Silica) is located at 26000 Black Diamond & Ravensdale RD, Ravensdale, WA 98051, in King County.

DETERMINATION OF VIOLATIONS

Notice is hereby given in accordance with RCW 90.48.120(1), as follows:

Discharge from seeps and springs and discharge into an infiltration pond on the Reserve Silica mine site exceed pH 12 at times and pH 8.5 routinely. These levels exceed the upper numerical pH standard of 8.5 in Chapter 173-200 Washington Administrative Code (WAC) and exceed narrative corrosivity criteria in the same WAC section. The standards also specify that discharges into the groundwater be “noncorrosive.” The permit has limits on discharge to groundwater of 6.5 to 8.5. This permit limit is intended to assure compliance with the pH standard in ground water of 6.5 to 8.5 cited in WAC 173-200-040. The discharge exceeds the permit limits.

The groundwater monitoring wells that are set down gradient of the infiltration pond show that the discharge into groundwater exceeds the numerical pH limits set in the groundwater standards. The monitoring well pH ranges from 7.10 to 10.24 overall. The leachate collected from the mine backfill, and then discharged into the infiltration pond onsite, exhibit pH levels that exceed the upper limit both in State rules and the permit.

On April 19, 2016, Chris Martin and Luis Buen-Abad, Water Quality Inspectors with the Department of Ecology (Ecology), inspected the Reserve Silica site to check the flow conditions of the seeps west of the Lower Disposal Area (LDA). Mr. Martin measured pH at the catch basin using a 0-14 range pH test strip. The pH was approximately ~13 (all pH levels are in standard units). The pH of the southernmost seep was then measured with a new test strip, and the result was ~13-14. At the infiltration ponds, they measured pH of discharge from hardline at approximately 13± with a pH test strip. They again measured pH at the southwest corner sampling location with a fourth new pH test strip, and the result came out to be 12-13.

On April 27, 2016, Chris Martin and Dan Dhillon met at the Reserve Silica site office at 1400 that afternoon. The two inspectors checked in with Mr. Cawfield and notified him of their intentions to collect additional pH readings. They drove to the infiltration ponds and performed a two-point calibration of the pH meter using 7.00 and 10.01 buffer solutions. The first reading was at the discharge from the hardline. The pH was 12.75. They walked around to the sampling location at the Southwest corner of the infiltration pond #1. They photographed "skin" on pond and collected a pH reading of 12.48.

Mr. Martin and Mr. Dhillon drove to the seeps to collect pH readings at the same locations as the week before. They measured pH at the seep control ditch catch basin of 12.59, and at the control ditch to the southernmost seep the pH was 12.86. The measured pH at the northernmost seep was 12.66.

Mr. Martin and Mr. Dhillon drove to the south end of the LDA to collect a pH reading of the groundwater interceptor trench discharge and measured a discharge pH at 7.81. While there, Mr. Martin also took several pH readings in the ditch along the east side of the main haul road and found the pH values to be between mid-9s to mid-11s.

Upon return to the Ecology office, Mr. Martin reviewed past readings for surface water samples and time-concentration graph submitted by Reserve Silica. He determined that infiltration pond #1 has been running above a pH of 12 in spring and summer since about 2013.

Permit condition S2 (Effluent Limits) of the General Sand and Gravel Permit specifies the pH limits as 6.5-8.5 for all discharges to surface and ground water. WAC 173-200-040 sets a limit pH in ground water of 6.5 to 8.5 and prohibits corrosivity. The infiltration pond exceeds the pH level, and at pH levels above 12 is considered potentially corrosive after infiltration into the ground water. Monitoring wells around the infiltration pond show a pH range of 7.10 to 10.20. These elevated pH levels in the monitoring wells show that the infiltration pond discharge into the ground violates the standards set in WAC 173-200-040.

When cement is dry, it contains calcium oxide, which is not particularly dangerous. However, when cement comes in contact with water, calcium hydroxide is formed, which is extremely alkaline with a pH of 12 to 13. Normal skin has a pH of 5.5; therefore, wet cement can cause alkaline (caustic) skin burns which progress and get worse without more exposure. There is a potential for humans, particularly children, coming in contact with the pond as the current fencing is not entirely prohibitive.

This determination does not constitute an Order or directive under RCW 43.21B.310.

FILE A REPORT WITH ECOLOGY

Pursuant to RCW 90.48.120(1), within thirty (30) days from receipt of this Notice of Violation Reserve Silica Corporation must file a full report with Ecology stating:

1. What steps HAVE BEEN taken to control such waste or pollution to otherwise comply with this determination of Ecology.
2. What steps ARE BEING taken to control such waste or pollution to otherwise comply with this determination of Ecology.

Send the report to:

Biniam Zelelow
Enforcement Specialist
Washington State Department of Ecology
Water Quality Program, Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

ECOLOGY'S RESPONSE

Upon receipt of the report, Ecology will review the information provided and issue an Order or directive as it deems appropriate under the circumstances, and shall notify Reserve Silica Corporation.

CONTACT INFORMATION


Please direct all questions about this Notice of Violation to:

Chris Martin
Senior Hydrogeologist
Washington State Department of Ecology
Water Quality Program, Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452
Phone: 425-649-7110
Email: cmar461@ecy.wa.gov

MORE INFORMATION

- **Chapter 90.48 RCW – Water Pollution Control**
<http://app.leg.wa.gov/RCW/default.aspx?cite=90.48>

SIGNATURE


Kevin C. Fitzpatrick
Water Quality Section Manager
NWRO Water Quality Section

June 29, 2016
Date