

Appendix E: NPDES Noncompliances

Table E.1. Summary of Y-12 NPDES excursions, 2000

Excursion	Date	Location	Incident
2000-0001	4/3/00	Outfall 088	Permit limit exceedence; pH 11.3
2000-0002	10/19/00	Outfall 048	Permit limit exceedence; Chlorine 0.84 mg/L
2000-0003	12/13/00	Monitoring Point S29	Permit limit exceedence; pH 4.7
2000-0004	7/27/00	Monitoring Point S06	Permit limit exceedence; pH 9.31
2000-0005	9/25/00	Monitoring Point S06	Permit limit exceedence; pH 9.80
2000-0006	9/28/00	Monitoring Point S02	Permit limit exceedence; pH 9.90 reported in March 2001 DMR

Excursion	Description/cause	Corrective action
2000-0001	<p>On April 3, 2000, a pH measurement taken at Outfall 088 resulted in a measurement of 11.2. This outfall drains a portion of the roof of Building 9201-1 and contains some condensate from air-conditioning units. The source of the elevated pH is suspected to be stagnant water.</p> <p>A major construction project south of this building, which was completed during the spring of 1999, resulted in reconfiguration of the piping flow path leading to Outfall 088. Prior to this time this outfall maintained an excellent compliance record.</p>	<p>On August 3, 2000, during a follow-up walkdown of the storm drain system in the basement of 9201-1, it was discovered that the roof drain piping and condensate piping were disconnected, allowing discharge to the basement of the building. The disconnected piping was allowing flow intended for this outfall to discharge to the basement of the building. The piping was repaired on August 7, 2000, and Outfall 088 is now discharging to the creek as expected. This outfall was sampled again on September 12, 2000, and pH is in compliance.</p>
2000-0002	<p>On October 19, 2000, at 10:20 a.m., a routine NPDES compliance sample taken from Outfall 48 discharge revealed a total residual chlorine reading of 0.84 mg/L. This reading is above the permit limit of 0.5 mg/L. An investigation as to the cause and source of the elevated chlorine determined the cause to be a malfunction of a tablet dechlorinator unit used for treating cooling water. The unit is located in Building 9401-1, the Advanced Propulsion Technology Center, operated by ORNL Engineering Technology Division.</p>	<p>The cooling water source, which is associated with a dynamometer installed at an engine test facility in Building 9401-1, was turned off at approximately 2:55 p.m. on October 20, 2000. Measurements taken between 3 p.m. and 4 p.m. on October 20 for total residual chlorine in the storm drain system between the source and Outfall 48 confirmed correction and revealed that the chlorine concentration was less than the detection limit of 0.05 mg/L. A measurement made at the outfall revealed the total residual chlorine to be compliant with permit requirements.</p> <p>Surveys of the storm drain system conducted on October 19 and 20 also found a potable water line leak, which was determined to be contributing flow to Outfall 48. Based on visual observations, the flow generated by the leak was significantly less than the cooling water flow from Building 9401-1. The water line leak was isolated and its flow stopped on the afternoon of October 19. The leak, while possibly a factor in elevating chlorine in the upper reach of the drain system associated</p>

with Outfall 48, is not believed to be the cause of the elevated chlorine measurement taken at the outfall on October 19, 2000.

2000-0003 On December 13, 2000, an NPDES permit exceedence occurred at monitoring point S29, which is located south of Landfill VII. Field monitoring by BWXT technicians, via grab sample, revealed a pH of 4.7 at 10:00 p.m., which was within 30 minutes of the onset of a qualifying storm event. The water was orange in color, indicating high turbidity, and the flow rate continued to increase during the monitoring event. Instrument calibration was checked and was determined to be within normal operating parameters.

None

Follow-up investigations confirmed that Landfill VII has yet to receive any waste, that no chemicals were applied to the Landfill VII watershed during the last calendar year, and that no spill of a chemical occurred in the area that would affect water pH. A walkdown of the watershed failed to reveal visible causes for a lowered pH. Document searches revealed that the underlayment for both Landfills V and VII consist of acidic soil (pH ranging from 4.5 to 5.5). Also, rainwater data gathered at a NOAA monitoring point in the Walker Branch Watershed shows an average pH of 4.36 over the last five years.

A grab sample collected on December 20, 2000 showed the water to be clear with a pH of 7.2.

It is concluded that the low pH was caused by two naturally occurring factors: strongly acidic soils and acidic rainwater.

2000-0004 On July 27, 2000 (excursion 2000-0004), and
and September 25, 2000 (excursion 2000-0005),
2000-0005 NPDES permit exceedences occurred at in-stream
monitoring point S06 which is located in Bear
Creek west of Tank Farm 4. The pH for the July
noncompliance was 9.31; in September it was
9.80.

None. The pH for this monitoring location was within limits when last sampled on December 13, 2000.

There does not appear to be a common cause for these two permit exceedences. The July excursion occurred during a period of dry weather and the September excursion occurred during a period of heavy rain. Also, the pH reading taken on August 17, 2000, was 6.79, which is within the pH limit of 4.0 to 9.0. Additionally, all pH readings taken since September 2000 have been within limits.

Individual causes for these exceedences cannot be determined. Investigations were not conducted at the time of the excursions due to delayed data reporting by non-BWXT Y-12 subcontractors. A review of associated data and of operations in the area surrounding the discharge point does not point to any particular activity that could be the primary cause of these events. Any attempt at identifying a cause for these excursions would be based solely on speculation.

- 2000-0006 During a data review, a pH data point was discovered to exceed the limits of the NPDES permit. There are no corrective actions to invoke for this noncompliance.

An NPDES permit limit exceedence occurred on 9/28/00 when the pH at S02 was measured at 9.9. This lies outside the allowable limits of 4.0 to 9.0 for this location. This result was obtained as part of a Comprehensive Environmental Response, Compensation, and Liability Act program, but was taken at the NPDES monitoring location. A subsequent sample, taken on 10/5/00, indicated the pH had returned to compliance with the NPDES permit.

The cause of this permit exceedence has not been determined. An investigation was not conducted at the time of the excursion, and a review of associated data and operations in the area surrounding the discharge point does not point to any particular activity that could be the primary cause of this exceedence. Any attempt at identifying a cause for this excursion would be based solely on speculation.

Table E.2. Summary of ETPP NPDES excursions, 2000

Date	Location	Excursion	Explanation	Corrective action
03/07/00	Outfall 014	Total Petroleum Hydrocarbons (TPH)	TPH level of 1.9 mg/L exceeded NPDES Permit limit of 0.1 mg/L	Investigation of the noncompliance was conducted, but no root cause for the incident could be identified
07/26/00	Outfall 014	Total Petroleum Hydrocarbons (TPH)	TPH level of 27.3 mg/L exceeded NPDES Permit limit of 0.1 mg/L	Investigation of the noncompliance was conducted, but no root cause could be identified
08/01/00	Outfall 014	Total Petroleum Hydrocarbons (TPH)	TPH level of 9.6 mg/L exceeded NPDES Permit limit of 0.1 mg/L	Activated carbon in carbon adsorption units was replaced
09/13/00	Outfall 014	Total Suspended Solids (TSS)	TSS level of 62 mg/L exceeded NPDES Permit limit of 40 mg/L	Investigation of the noncompliance was conducted, but no root cause could be identified
11/29/00	Storm Water Outfall 170	Unpermitted Discharge	Discharge from a broken sanitary sewer line entered the storm drain system and was discharged to Mitchell Branch	Broken sanitary sewer line was repaired as soon as possible after it was discovered
12/12/00	Storm Water Outfall 170	Unpermitted Discharge	Sulfamic acid solution, which was being used to flush a cooling tower, entered the storm drain system and was discharged to Mitchell Branch	Personnel were instructed to route the discharge to the sanitary sewer system