

Brown and Caldwell  
414 W. Soledad Ave, Suite 602  
Hagatna, Guam 96910  
(671) 300-4220



## Incident Report

**TO: Guam Environmental Protection Agency**

**FROM: Brown and Caldwell Constructors (on behalf of the Receiver GBB)**

<b>Date:</b>	<b>Report By:</b>	
<b>Incident Date:</b> 05/25/2023	<b>Incident Time:</b> 13:00	<b>Incident:</b> Tank Overflow

### Name and quantity of material(s) involved:

From 05/23/2023 to 05/25/2023, Guam experienced Typhoon Mawar. Guam was under COR 1 from 13:00 on Tuesday 05/23/2023 until 17:00 on Thursday 05/25/2023 when COR 4 was declared. Daily rainfall of 2.82-inches, 18.32-inches, and 6.04-inches was recorded at the USGS Mount Chachao Rain Gage on 05/23/2023, 05/24/2023, and 05/25/2023, respectively, for a total of 27.18-inches.

On 05/23/2023 before the arrival of Typhoon Mawar, Facility staff confirmed the emergency generator's fuel tank was full, the screens on the leachate pumps were cleaned and the leachate forcemain was back-flushed. Also, tree limbs near the pump station were trimmed. During COR 1, on 05/24/2023, Facility staff visited the Facility at 07:44 and in anticipating that Guam Power Authority would shut off the power to the island as the storm approached—which is their standard storm procedure—the emergency generator was turned on to ensure that the site had a continuous power supply during the storm event.

While still in COR 1, on 05/25/2023 at 13:00, Facility staff arrived at the Facility to conduct a post-storm assessment. The flowmeter serving the leachate collection system was found to be registering a flow of 0 gallons per minute (gpm). The emergency generator was operating.

After clearing fallen vegetation on the tank road which took approximately 10 minutes, staff were able to access the leachate storage tanks and pump station in the southern portion of the Facility. The secondary containment surrounding the tanks was found to be overflowing and pumps were not operating. The pumps were immediately switched to manual control and pump operation was restored. Operation of the pumps stopped the overflow within a few minutes and resulted in the drawdown of water in the secondary containment and the leachate storage tanks. Pump operation allowed the use of a portable pump to transfer water from the secondary containment into the tanks for discharge to the sewer.

It is estimated the pumps ceased operating at some point in time between 17:00 and 21:00 on 05/24/2023 (approximately 9 to 13 hours after a pre-storm assessment at 07:44 on 05/24/2023).

Based on pre-storm and post-storm pumping rates, it is estimated that between 66,000 gallons (gal) to 100,000 gal of leachate may have overflowed from the secondary containment. The estimated overflow volume does not reflect a reduction in overflow volume due to available storage in the tanks (potentially 27,700 gal) or secondary storage (potentially 29,500 gal). Accounting for the potentially available storage capacity would reduce the estimated overflow volumes to 8,880 gal and 42,800 gal, respectively.

Facility staff attempted to contact Guam EPA on Friday the 26<sup>th</sup> at 10:52. Contact with Guam EPA to communicate the overflow was made on Wednesday the 31<sup>st</sup> of May at 09:47.

**Assessment of actual/potential hazards outside the facility, where possible, and estimated quantity/disposition of recovered material (if any) that resulted in the incident:**

The ground surface in the vicinity of the leachate storage tanks slopes to Stormwater Basin #3, approximately 50 feet from the storage tanks. Stormwater Basin #3 discharges onto the ground surface approximately 200 feet from the Lonfit River. It is estimated that approximately 9.4 million gallons (mgal) of rainfall-runoff was discharged in Stormwater Basin #3 during the storm. While Facility staff did not have an opportunity to sample water in Stormwater Basin #3, we believe the rainfall-runoff entering the basin substantially diluted the overflow from the secondary containment rendering it insignificant.

**Description of the reason for non-compliance, period(s) including dates and times, and whether or not non-compliance has been corrected and anticipated time to continue if not corrected:**

The pumps were being powered by the Facility's emergency generator and for an unknown reason stopped operating even though the generator was still running. It is estimated the pumps may have ceased operating sometime between 17:00 and 21:00 on 05/24/2023 (approximately 9 to 13 hours after a pre-storm assessment at 07:44 on 05/24/2023). Pump operations were restored at 13:00 on 05/25/2023. (At the date of this report, we are awaiting an evaluation by a pump system contractor to ascertain, if possible, the cause of the pump stoppage. We will file a subsequent report on this matter with Guam EPA).

**Steps taken or planned to reduce, eliminate and/or prevent the recurrence of the non-compliance:**

Pump operation was immediately restored when Facility staff arrived at the leachate storage tanks and pump station. At that time, a portable pump was used to transfer water in the secondary containment into the storage tanks for discharge to the sewer.

A reason for the non-operational period of the pumps has not yet been ascertained. Since pumping resumed when the manual operation began, an electrical/control problem is suspected. The Facility's staff is working to secure the Facility's electrical/controls contractor to investigate and assess the situation, implement repairs, and recommend further corrective steps, if any. We will provide a subsequent report on corrective action.



**Figure 1. Condition of Leachate tanks and pump station when staff made it back to the site after the storm on the 25<sup>th</sup> of May.**



**Figure 2. Condition of the Leachate pump station when staff made it back to the site after the storm on the 25<sup>th</sup> of May.**



**Figure 3. Level of drawdown in the secondary containment due to the use of the portable pump to return the liquid into tank 2 by the morning of the 26<sup>th</sup> of May.**



**Figure 4. Level of drawdown in the leachate tanks by the morning of the 26<sup>th</sup> of May.**



**Figure 5. Photo of the Landfill Gas Flare and Pond 4 taken from the cap when staff made it back to the site after the storm on the 25<sup>th</sup> of May.**



**Figure 6. Trees across the tank access road when staff made it back to the site after the storm on the 25<sup>th</sup> of May.**



**Figure 7. Part of the perimeter fence on the eastern side of the site—damaged during the storm.**

**Brown and Caldwell Constructors**

Paul Bourke, Ordot Dump Post-Closure Facility Project Manager,  
Hagatna, Guam