

SECTION 14 INCIDENT REPORT (*Waste Management and Pollution Control Act*)

Date and Time of Notification:	Monday 27 th February 2023 15:40hrs
Person / Company:	Power and Water Corporation
Incident:	Discharge of highly diluted sewage from sewerage network due to wet weather

(a) the incident causing or threatening to cause pollution

i. Description of the waste that was discharged.

Highly diluted sewage.

ii. Indicative wastewater quality for the discharge.

Indicative wastewater quality for these overflows may be interpreted from Table 1. A high rainfall event occurred from the 22nd February 2023 to the morning of the 27th. Darwin continued to experience further heavy rainfall, rainfall figures shown in table 2. This prolonged heavy rainfall over a long duration resulted in sewage inflows to Ludmilla wastewater treatment plant, on average across the 5 days, of 65ML/Day and peaking at 4.9ML/Hr at 11:00Hrs 24/02/2023. **This is >5 times average dry weather flows (ADWF).**

Table 1: Inflows to Ludmilla WWTP

	Median Inflow (ML)	Median E. coli	Median Enterococci	Dilution Terminology
below ADWF	11.401	14,136,000	713,550	Undiluted
>ADWF	13.253	11,616,000	727,000	Partially Diluted
>2xADWF	29.629	8,164,000	323,000	Diluted
>3xADWF	44.043	6,488,000	261,300	Highly diluted
>4xADWF	51.048	5,634,500	238,100	
>5xADWF	99.841	2,359,000	218,700	

NOTE:

Based on 01/01/2018 to 31/12/2020 inflows to Ludmilla WWTP and monitoring events data.
 Average dry weather inflow being 11.9012 ML/day.

Table 2: Recent 24 Hour Rainfall Figures for Darwin Airport

Darwin Airport Rainfall Figures (Station 14015)			
22/02/2023	69.8mm	28/02/2023	20.2mm
23/02/2023	34.0mm	01/03/2023	11.4mm
24/02/2023	90.4mm	02/03/2023	2.8mm
25/02/2023	54.6mm	03/04/2023	7.6mm
26/02/2023	54.8mm	04/03/2023	14.4mm
27/02/2023	29.0mm	05/03/2023	0mm

Source of information: Australian Government Bureau of Meteorology

	<i>iii. Volume of the waste that was discharged.</i> The volume of wastewater discharged at each discharge location is unknown. No telemetric monitoring occurs at these locations, with the exception of the sewer overflow relief point located at the corner of Rapid Creek Road and Trower Road. This data will be downloaded and can be supplied at a later date if available. A telemetric issue has occurred and this may have impacted the data.
(b) the place where the incident occurred	<i>i. Description of the PWC asset from which the discharge occurred.</i> • Sewer overflow relief point (1/10) – 24 East Point Road, Parap • Sewer overflow relief point (3H) - Corner of Trower Road and Rapid Creek Road, Rapid Creek • Sewer overflow relief point (7/35) – 194 Casuarina Drive/Aralia St, Nightcliff • Sewer overflow relief point (7/29) – Corner of Palm Street and Casuarina Drive, Nightcliff • Sewer overflow relief point (M2/23) – Corner of 29 Solomon Street and Rapid Creek Road, Millner • Sewer overflow relief point (M2/18) – Corner of 14 Aldridge Place and Rapid Creek Road, Millner • Sewer overflow relief point (2C) – University Drive South, Charles Darwin University, Nakara • Sewer overflow relief point (M) – 4 Britomart Gardens Road, Alawa • Sewer overflow relief point (N/A) – Corner of Young Crescent and Wellington Parade, Alawa • Sewer overflow relief point (3M) – 60 Freshwater Road, Jingili • Sewer overflow relief point (8/3) – Old Bagot Ponds, Ludmilla (between Namarluk and Dick Ward Drives) • Sewer overflow relief point (13M) – 4 Gothenburg Crescent, Stuart Park • Sewage pumping station (SP042) - Namarluk Drive, Ludmilla • Sewage pumping station (SP007) – Rapid Creek Road, Rapid Creek • Sewage pumping station (SP008) – Lakeside Drive, Alawa • Sewage pumping station (SP009) - Rocklands Drive, Tiwi <i>ii. GPS coordinates of the discharge point from the PWC asset, and the final coordinates of the final discharge point.</i> • Sewer overflow relief point – 24 East Point Road, Parap 1. Discharge Point: 130.8376568E, 12.4342520S 2. Final discharge point: 130.8358461E, 12.4336630S (Vestey's Lagoon) • Sewer overflow relief point - Corner of Trower Road and Rapid Creek Road, Rapid Creek 1. Discharge Point: 12.385673 S, 130.864963 E 2. Final Point: 12.385733 S, 130.865954 E • Sewer overflow relief point – 194 Casuarina Drive/Aralia St, Nightcliff 1. Discharge Point: 12.381805 S, 130.841327 E 2. Final Point: 12.381806 S, 130.840992 E

	• Sewer overflow relief point – Corner of Palm Street and Casuarina Drive, Nightcliff 1. Discharge Point: 12.3835904 S, 130.8423179 E 2. Final Point: 12.3840031 S, 130.8416739 E • Sewer overflow relief point – Corner of 29 Solomon Street and Rapid Creek Road, Millner 1. Discharge Point: 12.3909409 S, 130.8674101 E 2. Final Point: 12.3909057 S, 130.8674520 E • Sewer overflow relief point – Corner of 14 Aldridge Place and Rapid Creek Road, Millner 1. Discharge Point: 12.3891770 S, 130.8658156 E 2. Final Discharge Point: 12.380997 S, 130.8658159 E • Sewer overflow relief point – University Drive South, Charles Darwin University, Nakara 1. Discharge Point: 12.33745311 S, 130.8684845 E 2. Final Discharge Point: 12.3746330 S, 130.8683233 E • Sewer overflow relief point – 4 Britomart Gardens Road, Alawa 1. Discharge Point: 12.3769951 S, 130.8771645 E 2. Final Point: 12.3769334 S, 130.8771040 E • Sewer overflow relief point – Corner of Young Crescent and Wellington Parade, Alawa 1. Discharge Point: 12.3794861 S, 130.8723377 E 2. Final Point: 12.3795841 S, 130.8722684 E • Sewer overflow relief point – 60 Freshwater Road, Jingili 1. Discharge Point: 12.3894775 S, 130.8710299 E 2. Final Point: 12.3895363 S, 130.8709853 E • Sewer overflow relief point – Old Bagot Ponds, Ludmilla (between Nemarluk and Dick Ward Drives) 1. Discharge Point: 12.4192582 S, 130.8507206 E 2. Final Point: 12.4194289 S, 130.8504072 E • Sewer overflow relief point – 4 Gothenburg Crescent, Stuart Park 1. Discharge Point: 12.4486975 S, 130.8444842 E 2. Final Point: 12.4487370 S, 130.8445834 E • Ludmilla sewage pumping station, Nemarluk Drive, Ludmilla 1. Discharge Point: 12.4144849 S, 130.8503154 E 2. Final Point: 12.4144254 S, 130.8458232 E • Rapid Creek/ Lakeside drive sewage pumping station, Rapid Creek Discharge point: 12.3806488 S, 130.8656252 E Final point: 12.3805596 S, 130.8665271 E • Sewage pumping station (SP009) - Rocklands Drive, Tiwi Discharge point: 12.3580681 S, 130.8777879 E Final point: 12.3593307S, 130.8762517 E
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	<i>iii. Indicate any locations nearby to the discharge point where public can gain ready-access, such as public open spaces through which the discharge moves.</i> Public access is possible to discharge locations throughout Darwin although due to wet weather conditions present the likelihood of people visiting these areas is low. Where possible signage and fencing was utilised to alert the public and deter access to sites. Clean up consistent with Sewage Spills/Overflow Response Work Instruction as appropriate to the location, and to minimise risk to the environment.
(c) the date and time of the incident	<i>i. The time and date of commencement and cessation of the discharge.</i> For the below overflows, that started on the 24th February 2023, start and stop dates and approximate times are provided below. • Sewer overflow relief point – 24 East Point Rd, Parap Started approx. AM, 24/02/2023 Ceased approx. AM, 28/02/2023 • Sewer overflow relief point – Cnr. of Trower Rd and Rapid Creek Started approx. AM, 24/02/2023 Ceased approx. AM, 28/02/2023 • Sewer overflow relief point – 194 Casuarina Drv/Aralia St Started approx. AM, 24/02/2023 Ceased approx. AM, 28/02/2023 • Sewer overflow relief point – Corner of Palm St and Casuarina Drv, Nightcliff Started approx. AM, 24/02/2023 Ceased approx. PM, 27/02/2023 • Sewer overflow relief point – Corner of 29 Solomon St and Rapid Creek Rd, Millner Started approx. AM, 24/02/2023 Ceased approx. PM, 27/02/2023 • Sewer overflow relief point – Cnr. of 14 Aldridge Pl. and Rapid Creek Rd, Millner Started approx. AM, 24/02/2023 Ceased approx. AM 27/02/2023 • Sewer overflow relief point – University Drv. South, Charles Darwin University, Nakara Started approx. AM, 24/02/2023 Ceased approx. AM 27/02/2023 • Sewer overflow relief point – 4 Britomart Gardens Rd, Alawa Started approx. AM, 24/02/2023 Ceased approx. AM 27/02/2023 • Sewer overflow relief point – Corner of Young Crescent and Wellington Parade, Alawa Started approx. AM, 24/02/2023 Ceased approx. AM 27/02/2023 • Sewer overflow relief point – 60 Freshwater Road, Jingili Started approx. AM, 24/02/2023 Ceased approx. AM 27/02/2023 • Sewer overflow relief point – Old Bagot Ponds, Ludmilla (between Namarluk and Dick Ward Drives) Started approx. AM, 24/02/2023 Ceased approx. AM 27/02/2023 • Sewer overflow relief point – 4 Gothenburg Crescent, Stuart Park Started approx. AM, 24/02/2023 Ceased approx. AM 27/02/2023 • Sewage pumping station (SP042) - Namarluk Drive, Ludmilla Started approx. 03:52hrs, 22/02/2023 Stopped approx. 21:30hrs, 01/03/2023

	• Sewage pumping station (SP007) – Rapid Creek Road, Rapid Creek Started approx. 07:00hrs, 23/02/2023 Stopped approx. 15:00hrs, 26/03/2023 • Sewage pumping station (SP008) – Lakeside Drive, Alawa Started approx. 07:00hrs, 23/02/2023 Stopped approx. 21:30hrs, 01/03/2023 • Sewage pumping station (SP009) - Rocklands Drive, Tiwi Started 05:50hrs, 25/02/2023 Stopped 13:30hrs, 26/02/2023 <i>ii. How PWC were notified, or became aware of the discharge.</i> Due to an issue with SCADA telemetric system, manual observation were conducted and where applicable overflow relief valves were opened. As a result the exact times discharges commenced is unknown. Manual observations were conducted on the morning of the 24th February 2023. <i>iii. The process by which the discharge occurred.</i> Due to significant rainfall in the Darwin catchment, and more heavy and intense rainfall forecast, sewage volumes within the sewerage system have increased significantly due to inflow and infiltration of stormwater. As a result of this, sewer overflows have occurred from sewer infrastructure. Power and Water also undertook opening sewer relief Valves at strategic points to relieve pressure in the system, preventing overflows within households, and manage potential human health/environmental impacts. <i>iv. The reason why the discharge occurred.</i> As per (c) iii. Sewerage network infrastructure has been designed to overflow with the best public health and environmental outcomes possible. Design focuses on not overflowing directly inside houses; rather discharge is designed to occur in a controlled manner at locations which can be accessed for infrastructure repair and clean up and with minimal public health or environmental impacts.
(d) how the pollution has occurred, is occurring or may occur	As per (c) iii & (c) iv.
(e) the attempts made to prevent, reduce, control, rectify or clean up the pollution or resultant environmental harm caused or threatening to be caused by the incident	<i>i. Confirmation signage and fencing has been erected, as appropriate.</i> Where appropriate, signage is displayed to alert the public and fencing in place to prevent access to the sites as per Sewage Spills/Overflow Response Work Instruction. <i>ii. Decontamination of the site as appropriate.</i> Clean up consistent with Sewage Spills/Overflow Response Work Instruction as appropriate to the location, and to minimise risk to the environment. Discharge sites inspected for any gross pollutants and removed as required.
(f) the identity of the person notifying the NT EPA	Power and Water Environmental Services team on behalf of Water Services

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Sewer overflow relief valve – 24 East Point Road, Parap



Sewer overflow relief valve - Corner of Trower Road and Rapid Creek Road, Rapid Creek



Sewer overflow relief valve - 194 Casuarina Drive/Aralia St, Nightcliff (jetty end)



Corner Palm Street and Casuarina Drive, Nightcliff



20 Solomon Street, Millner



14 Aldridge Place, Millner



University Drive South, Charles Darwin University, Nakara



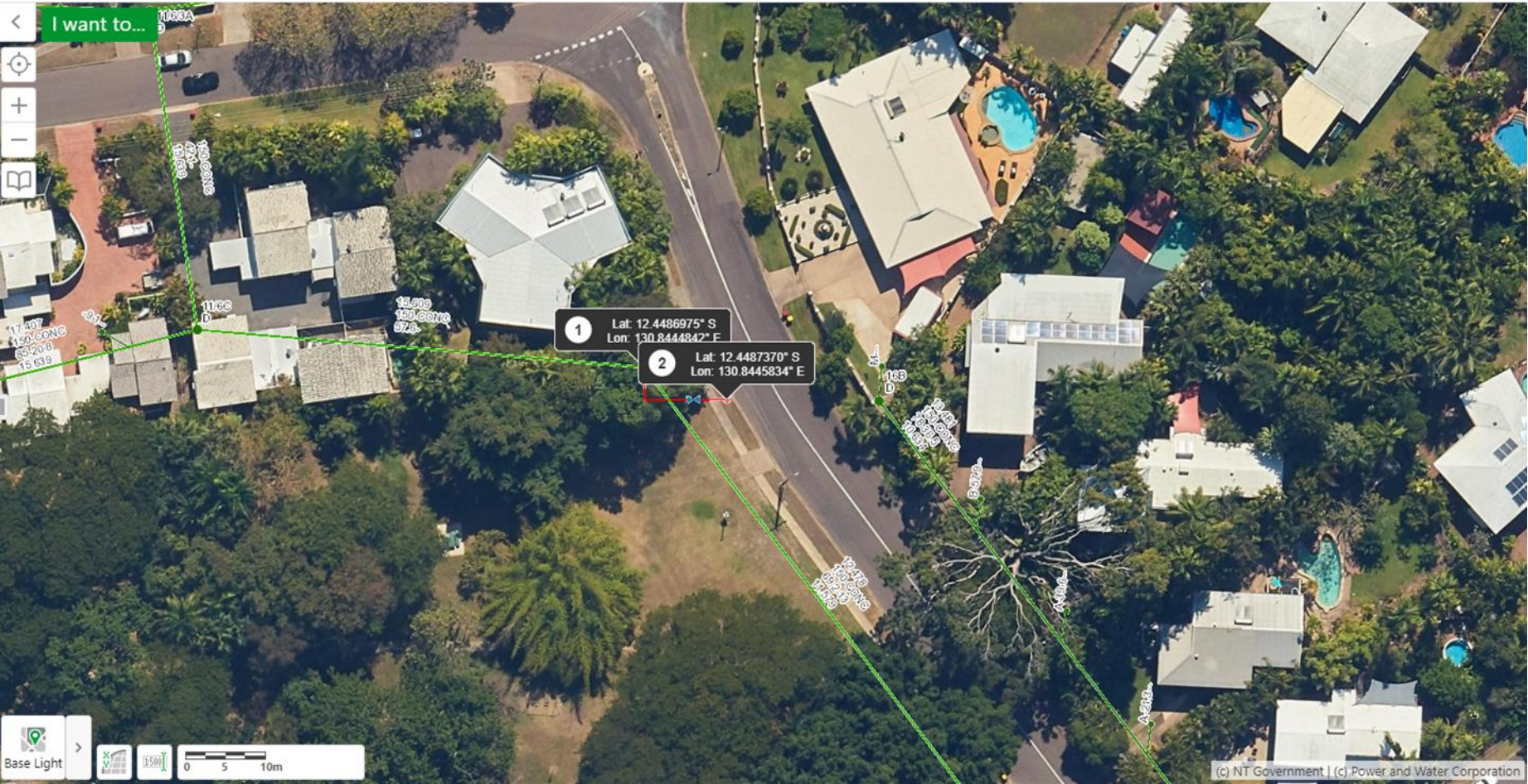
4 Britomart Gardens Road, Alawa



60 Freshwater Road, Jingili



4 Gothenburg Crescent, Stuart Park



Rapid Creek & Lakeside Drive Sewage Pumping Stations, Rapid Creek & Alawa



Ludmilla sewage pumping station – End of Nemarluk Drive, Ludmilla



Tiwi Sewer Pump - Station Rocklands Drive, Tiwi

