New Acland Coal

Tailings Dam Truck Recovery

New Acland Coal Mine

About New Acland

- Opencut thin seam mining operation since 2002
- 789 & 793 Caterpillar Trucks & Hitachi EX3600 & EX5600 Excavators used for over-burden & some inter-burden removal.
- D10 & D11 Dozers used for coal seam preparation & inter-burden removal.
- 785 & 789 Caterpillar Trucks & Cat 993 and 1350 LeTourneau Loaders used for loading out coal & inter-burden.
- 2 CHPP's that yield approximately 50% but varies from 20% to 80%.
- 2 years into restarting the mine after 18 months of Care & Maintenance while waiting for NAC03 approvals.
- Approx 300 employees presently employed on site.
- This financial year we are budgeted to 3.2 million tonnes of product coal.
- Aiming to produce up to 5 million tonnes of product coal at full production.

Management and Rehabilitation of Tailings at New Acland

Incident Overview

DT319 Stuck in IPT2/2 | Failure of Capping Material (28/01/2024)

- 23:05hrs Emergency called by Operator of DT319
  - “Emergency. Emergency. Emergency. I am stuck in the Inpit Tailings Cell. Help”… Radio Silence
- Site Mobilised to respond to the emergency
- Operator of DT319 was able to exit the cab via the passenger door
- The OCE and three other CMWs were able to wade out to the truck and rescued the Operator from off the truck
- The Operator was taken for medical assessment. They had sustained strains & bruises from exiting the truck but were ok overall

The Cold Light of Day

Incident Overview | What Happened

Recovery Plan & Risk Assessment

Preparation

- Incident reported to RSHQ, Inspector attended site and assessed situation. Directive given no to proceed with recovery until risk assessment and plan were signed off by RSHQ.
- Job broken down into stages and risk assessed
- Recovery Team made up of Maintenance, Production & Tech Services Personnel to develop a plan for the recovery of the truck and to conduct some reasonably in-depth Risk Assessments.
- Advice sort from Geo Technical Engineers (2 separate consultants used) around ongoing monitoring and assessment of ground conditions and the best way to approach the recovery regarding ground integrity concerns.

Three (3) Risk Assessments were conducted

1. Site Preparation (assess the truck and setup for recovery)
2. Recovery of Haul Truck
3. Emergency Preparedness

Major Hazards Identified

- Engulfment by free-flowing tailings
- Further unplanned movement of truck
- Additional failure of capping material during extrication
- Failure of recovery equipment during extrication

Recovery Plan | Stage 1 – Site Preparation

Recovery Plan | Stage 1 – Successful Completion

Recovery Plan | Stage 2 – Retrieval

Retrieval Equipment

- Lanko®line HMPE 12 strand braided rope
  - 40mm Lankoline Rope has a breaking force of 115T with no kick back. 100M of rope only weighs 85kgs for ease of handling

HMPE stands for High Modulus Polyethylene, a synthetic fiber known for its exceptional strength-to-weight ratio and resistance to abrasion, chemicals, and UV radiation. It is also commonly known as Ultra-High Molecular Weight Polyethylene (UHMWPE) or High-Performance Polyethylene (HPPE) and is used in applications like high-performance ropes for winching, towing, and maritime use.

article number	nominal diameter mm	inch	weight kg/100m	lb/100ft	MBF kN	MBF t (metric) ISO 2307	LDBF t(metric) OCIMF MEG4	MBF lbs
097.218	18	3/4	17,4	12	292	29,8	26,8	65.664
097.220	20	13/16	20,6	14	361	36,8	33,1	81.156
097.222	22	7/8	26,1	18	434	44,3	39,8	97.566
097.224	24	1	30,9	21	514	52,4	47,2	115.551
097.226	26	1 1/16	37	25	590	60,2	54,1	132.636
097.228	28	1 1/8	43,2	29	676	68,9	62,0	151.970
097.230	30	1 1/4	48,4	33	761	77,6	69,8	171.079
097.232	32	1 5/16	55,3	37	856	87,3	78,5	192.435
097.234	34	1 3/8	62,2	42	956	97,5	87,7	214.916
097.236	36	1 1/2	68	46	1.040	106,0	95,4	233.800
097.238	38	1 9/16	76	51	1.150	117,3	105,5	258.529
097.240	40	1 5/8	85,1	57	1.260	128,5	115,6	283.257
097.242	42	1 11/16	94	63	1.370	139,7	125,7	307.986
097.244	44	1 3/4	104	70	1.500	153,0	137,6	337.211
097.248	48	2	124	83	1.790	182,5	164,2	402.405
097.252	52	2 1/8	153	103	2.080	212,1	190,8	467.600
097.256	56	2 1/4	170	114	2.400	244,7	220,2	539.538
097.260	60	2 1/2	200	134	2.720	277,4	249,5	611.476
097.264	64	2 5/8	228	153	3.100	316,1	284,4	696.903
097.268	68	2 3/4	254	171	3.480	354,9	319,3	782.330
097.272	72	3	285	192	3.870	394,6	355,0	870.005

Other diameters on request

Diameter, weight and MBF (as well as other mechanical and physical properties) are determined according ISO 2307:2010. The MBF refers to the breaking strength in the rope / wire itself, without splices or any other form of termination that can be formed with or without the use of accessories / fittings.
The figures in red refer to the Line Design Breaking Force (LDBF) in spliced dry condition as per OCIMF MEG4 recommendations.

Recovery Plan | Stage 2 - Retrieval

Recovery.MP4

Recovery Plan | Stage 2 – Successful Completion

Learnings from the Recovery

- Take your time and plan/prepare for the recovery.
- Don’t forget to address the “what if’s” with the recovery. You can assume everything with go perfectly
- Work as a team to achieve a single goal. Different areas of the operation bring different expertise and think to table
- Having six D11s on the job certainly makes for much better drone footage

Reflections on the Incident

- What could we have done differently to avoid finding ourselves in this situation?
  - Set up of the work area
  - Inspections of the work area
  - Does the job need to be done on nightshift?

- Did we have to right process?
- Were we following the process that had been documented to cap the tailing dam?
  - Progressing too fast
  - Loss of control of the job
  - Change in operating condition/methodology during care and maintenance
  - What do we need to do to safely get back to capping the tailing?
  - How should we monitor the progress and foresee problems?

Questions

NAC

NEW ACLAND COAL