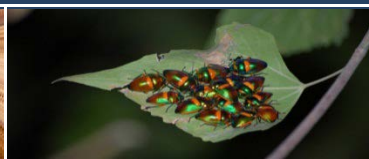




Appendix L Traffic Management Plan



Sherwin Iron (NT) Pty Ltd
Sherwin Creek Iron Ore Project
Environmental Impact Statement



2013





Traffic Management Report

Sherwin Iron Roper River Iron Ore Project



Traffic Management Report

Sherwin Iron Roper River Iron Ore Project

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Traffic Management
Report
Status: Draft 1

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1 Introduction

Sherwin Iron is planning to construct and operate the Roper River Iron Ore Project in the Roper River region, approximately 164km east of Mataranka, and is proposing to commence work in April 2013. The project will initially be in three phases.

- | | |
|---------|---|
| Phase 1 | Excavation of a 200,000t bulk sample over a three month period between June 2013 and September 2013, transported by road from the mine site to the port of Darwin using quad road trains. |
| Phase 2 | Excavation of 1,000,000t of ore per year for a maximum period of two years, starting between late 2013 and early 2014, transported by road from the mine site to the port of Darwin using quad road trains. |
| Phase 3 | Excavation of up to 3,000,000t of ore per year, transported off the public highway from the mine site to a railhead and then by rail to the port of Darwin, with another 7,000,000t per year being transported direct out to the Gulf of Carpentaria. |

This document covers generic issues associated with the movement of heavy vehicles (road trains) carrying the ore between the mine site and the Port of Darwin on public roads (phases 1 and 2), and should be read in conjunction with *RP001 – Roper River Iron Ore Project – Traffic Impact Statement (TIS)*. The public highways considered are the Roper and Stuart Highways. It excludes the movement of vehicles within the mine site itself.

Employee related trips pose a minimal increase in load on the road network via strict event management and a FIFO roster. Employee movement will be limited to a single return trip from site to Minyerie airstrip. Coinciding with the work roster this managed event will occur every 12 days with a suitable vehicle used to carry all employees. Employee travel will occur during break periods between the escorted managed transport runs. As construction will be carried out by the mining contractor all additional traffic will be managed by the transport coordinator. All other site contractor movements will be coordinated to align with the escorted managed transport runs by the transport coordinator.

2 Existing Conditions

2.1 Route Description

The 550km trip between the Sherwin Iron mine site access and the Port of Darwin is estimated to take in the order of 7.5 hours¹ - excluding loading/unloading times. It is acknowledged that this time frame may increase slightly given current speed limits on heavy vehicles exceeding 12 tonnes are restricted to 100km/h rather than the outside built-up area speed limit of 110km/h.

Rural access to and from the mine site is via the Roper Highway which connects to the Stuart Highway at the turn off south of Mataranka. The Roper Highway is a single lane sealed road typically in the order of 4m wide with localised widening at intersections. The speed limit over the western section of the Roper Highway between the Stuart Highway and mine site access is 110km/h. Loaded outbound and empty inbound road train shipments will be conducted under escort to and from the Mataranka interchange area. Road trains shipments will not travel in convoy past the interchange area. The interaction with public traffic and light vehicles at major intersections will be managed by the escort team.

Main Highway access from Mataranka to Darwin is via the Stuart Highway (north of Roper Highway), with routes to/from Darwin utilising existing 'as of right' road train access routes within the Katherine Region. The Stuart Highway is the main north-south route through the Northern Territory, typically being a two lane single carriageway road with an open road speed limit of 130km/h. Road trains in quadruple configuration will depart from the Mataranka interchange area at intervals not less than 10 minutes. The interval departure strategy will ensure sufficient space between the road trains on the highway for passing by public traffic. As quadruple roads trains are already permitted to travel along the Stuart Highway it is not envisaged that any unknown vehicle interaction issues will impact the transport process.

At present, the Roper Highway/Stuart Highway intersection is a Rural Channelised (CH) intersection that is understood to already accommodate quadruple road trains³. The mine site access/Roper Highway is currently a basic rural T-intersection.

2.2 Traffic Flows

2.2.1 Roper Highway

Traffic data for 2010 obtained from the Northern Territory (NT) Government Department of Lands and Planning *Annual Traffic Report (2010)*⁴ indicates an annual average daily traffic flow (AADT) of 76 vehicles per day along the Roper Highway to the west of the Sherwin Iron site (i.e. in-between the mine site and the Stuart Highway). A review of monthly traffic flow data (Figure 1b) suggests that volumes currently fluctuate between 30 and 120 vehicles per day (2-way traffic) depending upon the season, with the bulk of the traffic occurring between the months of May and September.

¹ Google maps

³ Opus Darwin Office

⁴ http://www.transport.nt.gov.au/_data/assets/pdf_file/0020/17534/ATR2010_Online.pdf

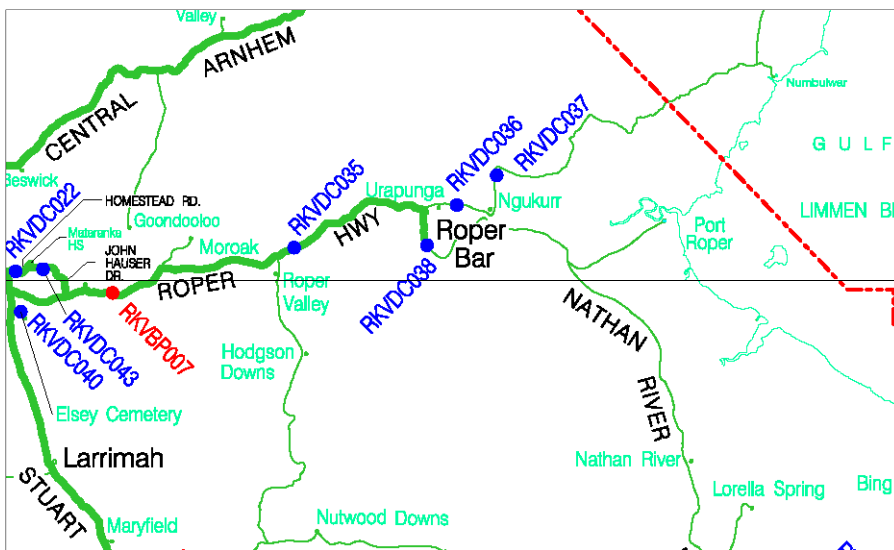


Figure 1a – the location of counter RKVBP007 (shown in Red)

Rural Primary Count Stations
Table: 2.2 Calculated AADT and Monthly ADT for Primary Stations

Key: Adjusted Data
Road Closure & Restriction
Road Restriction
Road Closure

Year: 2010
Region: Katherine

Road Name / Location	Station No	Direction	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AADT
Roper Highway 44km East of Stuart Highway	RKVBP007	Both	Veh	28	35	51	56	71	99	123	118	102	91	81	61	76

Figure 1b – latest available ADT figures from Dept. Lands and Planning Annual Traffic Report: 2010.

Traffic volumes further east along the Roper Highway (i.e. beyond the mine site) for previous years indicate much lower traffic volumes, fluctuating between 40 and 60 vehicles per day (2-way traffic) with a 50/50 directional split.

An assessment has been carried out in order to identify any potential hazards caused by the proposed increase in heavy vehicle traffic along the highway (between the Stuart Highway and the mine intersection). The route was driven on the 27th and 28th November 2012 during daylight, observations were made and photographs taken along the route, especially where there were deemed to be any:-

- Locations where there is potential for conflict between passing in-bound/out-bound heavy vehicles and/or pedestrian and public traffic, and
- Locations where there currently exists potential hazards to any vehicular traffic

2.2.2 Stuart Highway

The Stuart Highway is the main north-south route through the Northern Territory, typically being a two lane single carriageway road.

Traffic data for 2010 for the Stuart Highway indicates an AADT of 672 between Mataranka and Katherine (ADT Station RKVDP012) and an AADT of 6852 at the Intersection of Stuart Highway and Howard Springs Road, Greater Darwin region (ADT Station UDVDP023) The additional traffic generated by the mine site can be considered to have less impact on the Stuart Highway given the higher numbers of vehicles already using the road. As such, the additional traffic can be expected to be within existing daily traffic flow fluctuations with minimal impact on the existing operational efficiency or safety of the road.

3 Proposed Management Strategies Roper Highway

3.1 Phase 1 – Bulk Sample (3 months)

3.1.1 Initial Assessment

For 3 months between June 2013 and September 2013, Sherwin Iron intends to transport a bulk sample of 200,000 tonnes of iron ore from the mine site to the Darwin Port using quadruple road trains under escorted convoys from the mine site to the Stuart Highway, with a leading escort vehicle

The proposed number of movements per day both in and out of the mine site during the initial 3 month period - as documented in the TIS – is 50 heavy vehicles (25 each way). An assessment of the Austroads guidance as shown in Figure 2; the historical traffic figures, and the further background traffic generated by AIR indicates that the existing lane width of 3.7m will still meet the Austroads Guide to Road Design (Part 3, 2010) requirements for 150 vehicles or less for the proposed period of Phase 1.

Table 4.5: Single carriageway rural road widths (m)

Element	Design AADT				
	1 – 150	150 – 500	500 – 1,000	1,000 – 3,000	> 3,000
Traffic lanes ⁽¹⁾	3.7 (1 x 3.7)	6.2 (2 x 3.1)	6.2 – 7.0 (2 x 3.1/3.5)	7.0 (2 x 3.5)	7.0 (2 x 3.5)
Total shoulder	2.5	1.5	1.5	2.0	2.5
Minimum shoulder seal (2), (3), (4), (5), (6)	0	0.5	0.5	1.0	1.5
Total carriageway	8.7	9.2	9.2 – 10.0	11.0	12.0

Figure 2 – extract from Austroads Guide to Road Design (Part 3, 2010)

3.1.2 Temporary Traffic Management and Road Safety Measures

Given the short time frame to excavate and transport the bulk sample it is intended to put a temporary traffic management in place, to the approval of the Department of Transport, for the duration of the bulk sample haulage contract.

The road safety measures will include:

- Roadside signage to provide road users awareness of frequent heavy vehicle traffic;
- All vehicles will be “branded” so as to provide the public with a means to identify and report incidents they deem reportable;
- The use of leading escort vehicles, equipped with signage and flashing warning lights similar to those used when escorting wide loads;
- Quadruple road trains will travel in convoys in order to minimise the number of individual interactions with oncoming traffic and allow effective use of escort vehicles;
- Radio call-up procedures using the public UHF CH40 radio system. This provides road users, particularly other heavy vehicle traffic, prior warning of the location of oncoming heavy vehicles. An example radio announcement would be "Heavy vehicles travelling west on Roper Highway approaching Elsey Creek 15 km from Stuart Highway";

- A decoupling and recoupling yard will be used near Mataranka. As a result, a small group of

drivers using the Roper Highway will be managed in a more highly controlled manner. A second group of drivers will be used for the segment from Mataranka to Darwin;

- g) Additional site specific training and induction procedures will be adopted for the drivers hauling ore on the Roper Highway. This will include detailed familiarisation of the route and potential hazards, call-up procedures and emergency management procedures;
- h) Detailed Risk Assessment (RA), Safe Work Method Statements (SWMS) and Task Hazard Analysis (THA) will be adopted to identify, manage and control the risks associated with the project. These procedures will be documented in writing and each driver will formally agree to adhere to the standards set, and;
- i) All road trains travelling the Roper Highway will have IVMS (In Vehicle Management Systems) installed to provide tracking of location and speed of heavy vehicles. It also allows monitoring of driver behaviour patterns which will be used to assess and audit adherence to the adopted procedures.

3.1.3 Road Maintenance

A condition survey of the length of the Roper Highway, including shoulders, will be undertaken both prior to commencement of any haulage and at the completion of Phase 1. Approval from all stakeholders would be sought on the exact scope and detail of the survey prior to commencement. In addition to this an agreed monitoring program will be put in place during this phase. And remedial works together with costs agreed with DoT at the end of this phase of the works.

3.2 Phase 2 – Commencement of mining (duration 2 years maximum)

3.2.1 Upgrading of existing intersection

A Rural Basic Turn (BAR) type intersection to the approval of the Department of Transport will be constructed where the Mine Site Access / Roper Highway meet to allow for the safe movement of quad road trains turning left out of the Mine Site Access onto the Roper Highway and returning the same way turning right from the Roper Highway on to the Mine Site Access – see Appendix A. As part of the approval process an independent road safety audit will be undertaken on the design.

3.2.2 Addressing potential hazards

3.2.2.1 Horizontal Curves

Where it is deemed from the initial assessment that an existing horizontal curve is not wide enough, and that there is inadequate sight distance, it is proposed that the seal be widened to allow opposing vehicles to pass each other without needing to pull onto the shoulder. In accordance with Austroads *Guide to Road Design Part 3: Geometric Design Section 4.2.6* the road at these nominated curves would be widened to 7.0m (2 x 3.5m lanes).



Figure 3 - Curve at Approx. Ch58

3.2.2.2 Sight Distances

As highlighted in the TIS, there are eight single lane bridge crossings on the Roper Highway between the mine site access and the Stuart Highway and there are instances where sight distances fall below Austroad standards, it is proposed that Vehicle Activated warning Signs (VAS) be erected on each of these approaches warning drivers of approaching traffic.

3.2.2.3 Shoulder treatment at Culvert locations

With the increase in traffic movements, the need to pull off to the side of the road will increase as vehicles pass each other. There have been a number of culverts identified whose headwalls are located approximately 2m from the edge of seal and are considered to pose a potential threat to vehicles pulling too far off the carriageway either intentionally or otherwise. During the day when there is good visibility these culverts are relatively easy to spot and pose no danger to safety, but at night it will be harder to discern the edge of the carriageway.

It is therefore proposed that culverts that currently begin/end within 2.5m from the edge of seal be extended to a minimum of 2.5m from the edge of seal, and a minimum of 4 guide posts each side of the carriageway be installed to highlight the location of the culvert headwall.



Figure 2 – Culvert headwall within 2.5m of edge of seal

3.2.2.4 Overtaking Lanes

Along the length of the Roper Highway currently there are no constructed overtaking lanes and limited opportunities to overtake another vehicle without the vehicle ahead pulling over and indicating that it is safe to pass. With the proposed increase in the traffic volumes between the Stuart Highway and the mine site access road - the majority of which will be slower moving quad road trains – it is proposed that three passing places are constructed along the length of the Roper Highway at positions to be agreed with the Department of Transport. The construction of these passing places will reduce driver frustration and the associated dangers resulting from irrationally performed overtaking manoeuvres.

3.2.2.5 Road Maintenance

A condition survey of the length of the Roper Highway, including shoulders, will be undertaken prior to commencement of any haulage as part of Phase 2. Approval from all stakeholders would be sought on the exact scope and detail of the survey prior to commencement. Following this an agreed monitoring and asset management program will again be put in place and agreed with all those holding a stake in the management and continued functional operation of the Roper Highway.

3.2.2.6 Road Closure and Restrictions

Data received from the Department of Transport (refer Appendix B) indicates that the Roper Hwy is subject to flooding and water damage with implications ranging from complete road closures due to impassibility, to vehicle and weight restrictions and simply caution being advised. These restrictions can vary each year with no closures reported in 2005 & 2007, but 42 days during 2011.

Roper Highway Status (2005 to 2011)			
Closed	Open (no restrictions)	Open (weight restrictions apply) (Overlaps with water over road)	Open (water over road)
6 days	310 days	4 days	49 days

Note: This table shows the average number of days affected each year over the six year period.

Traffic to and from the site will operate throughout the year. It is not intended to restrict any hours of driver operation other than as required as part of driver fatigue management and/or noise mitigation. It intended to operate only during the 310 days when the Roper Highway has non restricted opening.

4 General Transport Management Strategies

Sherwin Iron proposes to let a contract to a recognised contactor for haulage of their ore along the Roper and Stuart Highways. As part of that contract a traffic management plan in addition to the measures discussed here will be developed and agreed with Department of Transport. Some of the management strategies are discussed below.

4.1 Safety Awareness Measures (including fatigue management)

An induction for all drivers of quad road trains working on the project will be carried out with attendance mandatory regardless of any previous experience. Training as part of this induction will include route familiarisation in order to allow any hazardous locations to be identified. Confirmation of a driver's competency to ensure their suitability to operate the assigned vehicle will be carried out through the heavy haulage operation company.

Given the anticipated journey length and the mandatory management of driver fatigue for transport operations in the Northern Territory (regulated by NT WorkSafe), a fatigue management plan will be developed to include training and awareness on the issue as well as legal requirements, details of any rest areas and toilet facilities along the route and individual driver rosters. As part of this, the NT Fatigue Management Road Transport Code of Practice will be adopted by any heavy haulage operation providing services to the project with respect to the driver being in a fit state to undertake the driving task, being fit enough to complete the task and having minimum periods of rest, such as having at least six hours rest in any 24 hour period.

In the event of a vehicle accident, the standard heavy haulage operator's procedures will be followed including the reporting of the accident to both the police and Sherwin Iron, while notifiable incidents will also reported to NT WorkSafe.

4.2 Roper Highway Section.

Haulage to Darwin will be by means of Quadruple road trains, which will be escorted from the front. No more than 4 road trains will be travel together at any one time, escorts and drivers will be instructed on risk and safety management.

4.3 Fauna Road Strike Management

In the event of an animal strike resulting in damage and/or injury to a driver or personnel within the heavy vehicle, accident procedures identified above will be followed. As part of this, drivers of vehicles using the Roper Highway will need to be inducted and trained with respect to anticipated hazards and risks.

4.4 Load Restraint

In accordance with the *Northern Territory Traffic Regulations* and the *Australian Road Rules*, Iron Ore being transported from the mine site to Darwin will be secured and located in covered trailers. In addition, it is proposed a wash down area be provided to ensure that the wheels, body and underside of vehicles are free of mud and/or other contaminants prior to accessing the sealed road section of the Roper Highway from the mine site access. Periodic inspections of the Roper Highway in the vicinity of the mine site access should be carried out (and recorded) by Sherwin Iron to ensure material is not being dropped onto the road. A cleaning regime will be put in place to ensure the Roper Highway remains free of mud and debris.

4.5 Noise Mitigation

Careful scheduling of vehicles to reduce traffic volumes passing any residential areas within the Mataranka and Katherine areas between 9pm and 7am will be carried out in conjunction with the heavy haulage contractor. Engine and compression braking restrictions will be in accordance with existing legal requirements.

4.6 Heavy Vehicle breakdown

It is proposed an action plan be put in place by the heavy haulage operator to deal with the possibility of heavy vehicle breakdown while en route. The plan should particularly address the prompt, safe and efficient removal of an immobilised heavy vehicle from any public road during the course of the project.

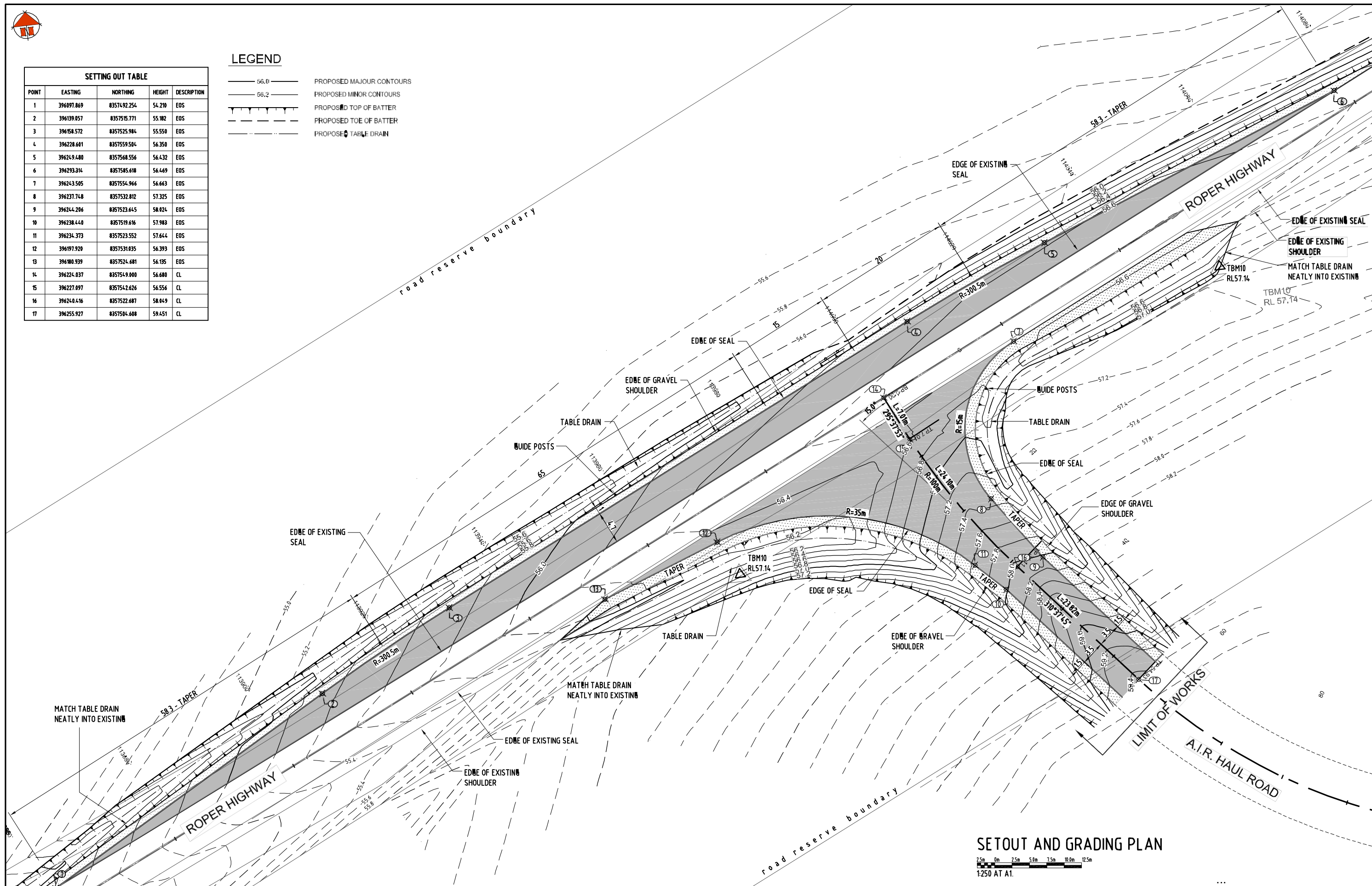
5 Appendix A – Mine Site Access / Roper Highway typical design.



SETTING OUT TABLE				
POINT	EASTING	NORTHING	HEIGHT	DESCRIPTION
1	396097.869	8357492.254	54.210	EOS
2	396139.057	8357515.771	55.182	EOS
3	396158.572	8357525.984	55.550	EOS
4	396228.681	8357559.504	56.350	EOS
5	396249.480	8357568.556	56.432	EOS
6	396293.314	8357585.618	56.469	EOS
7	396243.505	8357554.966	56.663	EOS
8	396237.748	8357532.812	57.325	EOS
9	396244.286	8357523.645	58.024	EOS
10	396238.440	8357519.616	57.983	EOS
11	396234.373	8357523.552	57.644	EOS
12	396197.920	8357531.035	56.393	EOS
13	396180.939	8357524.681	56.135	EOS
14	396224.037	8357549.000	56.680	CL
15	396227.097	8357542.626	56.556	CL
16	396240.416	8357522.687	58.049	CL
17	396255.927	8357504.608	59.451	CL

LEGEND

- 56.0 PROPOSED MAJOR CONTOURS
- 56.2 PROPOSED MINOR CONTOURS
- PROPOSED TOP OF BATTER
- PROPOSED TOE OF BATTER
- PROPOSED TABLE DRAIN



SETOUT AND GRADING PLAN



No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
2	ISSUED FOR TENDER	05 NOV 12	OAR	
1	ISSUED FOR DCI APPROVAL	04 OCT 12	WE	
0	ISSUED FOR DCI COMMENT / APPROVAL	25 SEP 12	WE	
AMENDMENTS				



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DRAWN	GWE	CHECKED	
DATE	SEP 12	DATE	
DESIGNED	GWE	CHECKED	
DATE	SEP 12	DATE	
DESIGN PROJECT LEADER		PROJECT OFFICER	
DATE		DATE	



Northern Territory Government
Department of Planning and Infrastructure

ROPER REGION ROPER BAR INTERSECTION UPGRADE - ROPER HIGHWAY AND THE AIR HAUL ROAD SETOUT AND GRADING PLAN					
FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
-	-	C1.05 OF 6	R12-2038	2	A1



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Traffic Impact Statement

Sherwin Iron Roper River Iron Ore Project





Traffic Impact Statement

Sherwin Iron

Roper River Iron Ore Project

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Status: Issue 1

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Gerry Oorloff
Northern Territory Business Manager / Associate



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1 Introduction

Sherwin Iron is planning on constructing and operating the Roper River Iron Ore Project in the Roper River region, approximately 164km east of Mataranka. For the first 2 years of production, as part of the project, Sherwin Iron intends to transport iron ore from the site to the Darwin Port by heavy vehicles (road train). Alternative transport arrangements are being planned and are expected to be in place by the end of the 2 year period with options including the construction of a haulage route parallel to the Roper Highway and then by train from the Mataranka or Katherine area or use of barge down the Roper River.

This document covers generic issues associated with the movement of heavy vehicles carrying the ore between the mine site and Darwin on public roads. It excludes the movement of vehicles within the mine site itself as well as any construction traffic.

Employee related trips pose a minimal risk and increase in load on the road network via strict event management and a FIFO roster. Employee movement will be limited to a single return trip from site to Minyerie airstrip. Coinciding with the work roster this managed event will occur every 12 days with a suitable vehicle used to carry all employees. Employee travel will occur during break periods between the escorted managed transport runs. As construction will be carried out by the mining contractor all additional traffic will be managed by the transport coordinator. All other site contractor movements will be coordinated to align with the escorted managed transport runs by the transport coordinator.

2 Existing Conditions

2.1 Route Description

The 550km trip between the Sherwin Iron mine site access and Darwin is estimated to take in the order of 7 and a half hours¹ - excluding loading/unloading times.

Rural access to and from the mine site is via the Roper Highway which connects to the Stuart Highway at the turn off south of Mataranka. The Roper Highway is a single lane sealed road typically in the order of 4m wide with localised widening at intersections. The speed limit over the western section of the Roper Highway between the Stuart Highway and mine site access is 110km/h. Loaded outbound and empty inbound road train shipments will be conducted under escort to and from the Mataranka Interchange area. Road train shipments will not travel in convoy past the interchange area. The interaction with public traffic and light vehicles at major intersections will be managed via the escort team

Main Highway access from Mataranka to Darwin is via the Stuart Highway (north of Roper Highway), with routes to/from Darwin utilising existing 'as of right' road train access routes within the Katherine Region. The Stuart Highway is the main north-south route through the Northern Territory, typically being a two lane single carriageway road with an open road speed limit of 130km/h. Road trains in quadruple configuration will depart from the Mataranka interchange area at intervals not less than 10 minutes. The interval departure strategy will ensure sufficient space between the road trains on the highway for passing by public traffic. As quadruple roads trains are already permitted to travel along the Stuart Highway it is not envisaged that any unknown vehicle interaction issues will impact the transport process.

At present, the Roper Highway/Stuart Highway intersection is a rural channelised intersection that is understood to already accommodate quadruple road trains as observed by their use along the Roper Highway (refer photos in Appendix A). The mine site access/Roper Highway is currently a basic rural T-intersection.

¹ Google maps – Estimated travel time

2.2 Background Traffic Flows

2.2.1 Roper Highway

Traffic data for 2010 obtained from the Northern Territory (NT) Government Department of Lands and Planning *Annual Traffic Report (2010)*² indicates an annual average daily traffic flow (AADT) of 70 vehicles per day along the Roper Highway to the west of the Sherwin Iron site (i.e. in-between the mine site and the Stuart Highway). A review of monthly traffic flow data suggests that volumes currently fluctuate between 30 and 120 vehicles per day (2-way traffic) depending upon the season.

Traffic volumes further east along the Roper Highway (i.e. beyond the mine site) for previous years indicate much lower traffic volumes, fluctuating between 40 and 60 vehicles per day (2-way traffic) with a 50/50 directional split.

2.2.2 Stuart Highway

Traffic data for 2010 for the Stuart Highway indicates an AADT of 672 between Mataranka and Katherine (ADT Station RKVDP012) and an AADT 6852 at the Intersection of Stuart Highway and Howard Springs Road, Greater Darwin region (ADT Station UDVDP023)

3 Traffic Generation

3.1 Proposed Traffic Generation

Quadruple road trains capable of transporting up to 90 tonnes of iron ore will be used to transport the iron ore from the mine site Darwin, before returning empty back to the mine site to recommence the transporting of material. Initially, Sherwin Iron is to transport a bulk sample of 200,000 tonnes over a 3 month period commencing June 2013. Transportation of up to 1,000,000 tonnes per year of ore will commence around the third quarter of 2013 this will be short term for a maximum period of 2 years.

Vehicle trips associated with the initial 200,000 tonne bulk sample will be around 50 movements per day (25 inbound and 25 outbound) for a period of three months. There will be approximately 76 movements per day (38 inbound and 38 outbound) when production starts at 1,000,000 tonnes of iron ore per year (see table below) this for a maximum period of 2 years.

Travel Arrangements	Required Outbound Movements / Day	
	200,000 tonnes (first 3 months)	1,000,000 tonnes/year
90-105 tonnes per trip for 300 days per year	24.7 (rounded up to 25)	38

² http://www.transport.nt.gov.au/_data/assets/pdf_file/0020/17534/ATR2010_Online.pdf

Traffic to and from the site will operate throughout the year. It is not intended to restrict any hours of driver operation other than as required as part of driver fatigue management system and/or noise mitigation.

3.2 Road Closure and Restrictions

Data received from the Department of Transport (refer Appendix B) indicates that the Roper Hwy is subject to flooding and water damage with implications ranging from complete road closures due to impassibility, to vehicle and weight restrictions and simply caution being advised. These restrictions can vary each year with no closures reported in 2005 & 2007, but 42 days during 2011.

Roper Highway Status (2005 to 2011)			
Closed	Open (no restrictions)	Open (weight restrictions apply) (Overlaps with water over road)	Open (water over road)
6 days	310 days	4 days	49 days

Note: This table shows the average number of days affected each year over the six year period.

Traffic to and from the site will operate throughout the year. It is not intended to restrict any hours of driver operation other than as required as part of driver fatigue management and/or noise mitigation. It is intended to operate only during the days when the Roper Highway has non restricted opening.

3.3 Traffic Assignment

Heavy vehicle traffic associated with transporting the iron ore will travel between the mine site access and Darwin, along the Roper and Stuart Highways.

4 Traffic Impact

4.1 Roper Highway

4.1.1 Pavement and Seal

The additional reported traffic generated by the mine site of 76 movements a day represents a significant increase in the annual average daily traffic flow along the Roper Highway. Austroads Guide to Road Design Part 3: Geometric Design (2010) Table 4.5: Single carriageway rural road widths notes that for 150 vehicles per day, a single traffic lane of 3.7m with 2.5m wide shoulders is acceptable. The total traffic movements on the Roper Highway with trip generation from the Sherwin Iron mine site is in line with the Austroads guidance. The Traffic Management Plan will cover the increase in traffic.

4.1.2 Overtaking Opportunities

There are limited opportunities to overtake another vehicle without the vehicle ahead pulling over and indicating that it is safe to pass. With a significant increase in the traffic volumes of which the majority will be slower moving triple road trains, the need for safe passing areas becomes increasingly important to avoid an increase in accidents caused by drivers becoming impatient and attempting to overtake on sections of road where it could be unsafe. This will be covered further in the Traffic Management Plan.

4.1.3 Bridge Safety

There are eight (8) existing single lane bridge crossings between the Stuart Hwy and the proposed mine site entrance where they traverse the Salt, Strangways, Mayhew, Sayle, Packsaddle, Fizzer, Cheon and Sherwin Creeks. There is existing advance signage generally located in accordance with Department of Transport and Works Drawing R84-1056 which details the construction of Stage 1 Works for the Roper Highway. The drawings detail a R6-1B (No Overtaking or Passing) sign 60m before the start of the guardrail and W4-1B (Narrow Bridge) and W8-16B (One Lane) Warning Signs located 200m before the R6-1B Signs on the approach to each bridge. This design is in accordance with the requirements of AS1742.2-1994. The Guide to Road Design Part 3: Geometric Design designates the required truck stopping sight distance to be 345m with a reaction time of 2.5 seconds and a coefficient of deceleration of 0.145. The bridges for Strangeways, Sayle, Packsaddle and Fizzer Creek do not have adequate sight Refer to the Traffic Management Plan for further detail.

4.1.4 Existing Property Accesses

There are several property accesses that are located along the Roper Highway. These accesses are generally widened to allow for truck turning movements and have adequate sight distance and the additional traffic is not expected to have a significant impact.

In addition to the signed property access there are a number of unmarked tracks that lead off from the Roper Highway. Some of these have reduced visibility because of their proximity to crest and/or horizontal curves. No traffic was observed on these tracks over the extent of the journey and are not expected to have an impact.

4.1.5 Accident History

In the last 10 years, there have been a total of 35 reported accidents (Refer Appendix C) with between 2 to 7 per year. Of the 35 accidents to have occurred during this period, 13 involved the vehicle overturning, 4 of which were fatal, and this is in no way peculiar to the Roper Highway and is a common cause of accidents across the Northern Territory. Further analysis also showed 34% of the recorded accidents occurred when lighting was poor (dusk/dawn and after dark).

4.2 Stuart Highway

The additional traffic generated by the mine site can be considered to have less impact on the Stuart Highway given the higher numbers of vehicles already using the road. As such, the additional traffic can be expected to be within existing daily traffic flow fluctuations with minimal impact on the existing operational efficiency or safety of the road.

4.3 Pedestrian Safety

On the Roper Hwy approximately 20km from the Stuart Hwy intersection between the Salt Creek and Elsey Creek Crossings is an area commonly used as a pedestrian crossing point by the people of the Jilkminggan community. The area is signposted and the increased traffic is not expected to have major impact.

5 Appendix A – Photos



002 9.4km Outbound.JPG



003 9.4km Outbound.JPG



004 9.4km Inbound.JPG



006 14.2km Outbound.JPG



007 14.2km Outbound.JPG



008 14.2km Outbound.JPG





012 15.7km Inbound.JPG



013 15.7km Outbound.JPG



015 17.2km Outbound.JPG



016 17.2km Inbound.JPG



017 17.2km Outbound.JPG



018 18.5km Outbound.JPG





021 20km Salt Ck Bridge Outbound.JPG



022 20km Inbound.JPG



024 20km Outbound.JPG



025 20km Salt Ck Bridge Outbound.JPG



026 20km Salt Ck Bridge Outbound.JPG



027 20km Salt Ck Bridge Outbound.JPG





030 20km Outbound.JPG



032 21.0km Outbound.JPG



033 21.0km Outbound.JPG



035 21.1km Inbound.JPG



036 21.5km Elsey Ck Outbound.JPG



037 21.5km Elsey Ck Outbound.JPG





040 22.9km Outbound.JPG



041 22.9km Outbound.JPG



043 24.0km Outbound.JPG



044 24.0km Outbound.JPG



046 24.0km Outbound.JPG



047 24.0km Outbound.JPG





051 24.5km Outbound.JPG



052 24.5km Outbound.JPG



053 24.5km Outbound.JPG



054 25.2km Outbound.JPG



055 25.2km Outbound.JPG



056 28.0km Outbound.JPG





059 28.0km Outbound.JPG



060 28.0km Outbound.JPG



061 28.0km Outbound.JPG



062 28.0km Inbound.JPG



063 29.3km Outbound.JPG



064 29.3km Outbound.JPG





068 31.2km Outbound.JPG



069 31.2km Outbound.JPG



070 31.2km Inbound.JPG



071 31.2km Inbound.JPG



072 31.2km Culvert.JPG



073 31.2km Inbound.JPG





078 31.5km Outbound.JPG



079 33.5km Outbound.JPG



080 33.5km Outbound.JPG



083 35.5km Outbound.JPG



084 35.5km Outbound.JPG



085 35.5km Outbound.JPG





089 38.6km Outbound.JPG



090 38.6km Outbound.JPG



091 38.6km Outbound.JPG



092 38.6km Outbound.JPG



094 41.7km Outbound.JPG



095 41.7km Inbound.JPG





099 48.2km Outbound.JPG



100 48.2km Inbound.JPG



101 48.2km Outbound.JPG



102 48.2km Outbound.JPG



104 48.6km Outbound.JPG



105 48.6km Outbound.JPG





108 48.6km Outbound.JPG



109 50.0km Outbound.JPG



110 50.0km Outbound.JPG



111 56.6km Outbound.JPG



113 56.6km Outbound.JPG



114 57.9km.JPG





117 57.9km Outbound.JPG



119 58.3km Outbound.JPG



120 58.3km Outbound.JPG



121 58.3km Outbound.JPG



123 58.7km Inbound.JPG



124 58.7km Culvert.JPG





128 65.8km Moroak Stn Access Outbound.JPG



129 65.8km Moroak Stn Access Outbound.JPG



130 65.8km Moroak Stn Access.JPG



131 65.8km Moroak Stn Access.JPG



132 65.8km Moroak Stn Inbound.JPG



133 65.8km Moroak Stn Outbound.JPG





136 65.8km Inbound.JPG



137 66.7km Outbound.JPG



138 66.7km Outbound.JPG



139 66.7km Outbound.JPG



141 70.7km Outbound.JPG



142 70.7km Outbound.JPG





146 74.1km Outbound.JPG



147 74.1km Inbound.JPG



148 74.1km Outbound.JPG



149 74.1km Outbound.JPG



151 77.0km Outbound.JPG



153 77.8km Outbound.JPG





156 77.9km Outbound.JPG



158 80.5km Inbound.JPG



159 80.5km Outbound.JPG



160 80.5km Outbound.JPG



162 82.4km Outbound.JPG



163 82.4km Outbound.JPG





166 82.6km Strangways Ck Inbound.JPG



167 82.6km Strangways Ck.JPG



168 82.6km Strangways Ck.JPG



169 82.6km Strangways Ck Outbound.JPG



170 82.6km Strangways Ck Inbound.JPG



172 83.8km Outbound.JPG





186 88.0km Outbound.JPG



187 88.0km Outbound.JPG



188 88.3km Outbound.JPG



189 88.3km Outbound.JPG



190 89.5km Mayhew Ck Outbound.JPG



192 89.5km Mayhew Ck Outbound.JPG





196 90.5km Inbound.JPG



197 90.5km Inbound.JPG



198 90.5km Outbound.JPG



199 90.5km Inbound.JPG



201 92.7km Mole Hill Access.JPG



2012_11_27_999_269.JPG





2012_11_27_999_272.JPG



2012_11_27_999_273.JPG



2012_11_27_999_274.JPG



2012_11_27_999_275.JPG



2012_11_27_999_276.JPG



2012_11_27_999_277.JPG





2012_11_27_999_280.JPG



2012_11_27_999_281.JPG



2012_11_27_999_282.JPG



2012_11_27_999_283.JPG



202 92.7km Mole Hill Access Outbound.JPG



203 92.7km Mole Hill Access Inbound.JPG





206 95.1km Outbound.JPG



207 95.1km Outbound.JPG



208 95.6 Sayle Ck Outbound.JPG



210 95.6km Sayle Ck Outbound.JPG



211 95.6km Sayle Ck Outbound.JPG



213 101.9km Outbound.JPG





216 101.9km Outbound.JPG



217 103.3km Outbound.JPG



218 103.3km Outbound.JPG



220 103.3km Packsaddle Ck Outbound.JPG



221 103.3km Packsaddle Ck Outbound.JPG



222 103.3km Packsaddle Ck Outbound.JPG





225 103.3km Packsaddle Ck.JPG



227 104.2km Outbound.JPG



228 104.2km Outbound.JPG



229 104.2km Outbound.JPG



231 107.4km Outbound.JPG



232 107.6km Outbound.JPG





235 108.0km Outbound.JPG



236 108.0km Outbound.JPG



237 108.0km Outbound.JPG



239 112.0km Outbound.JPG



240 112.0km Outbound.JPG



241 112.0km Outbound.JPG





246 113.0km Outbound.JPG



247 113.0km Outbound.JPG



248 113.0km Outbound.JPG



249 113.0km Outbound.JPG



250 114.0km Outbound.JPG



251 115.0km Outbound.JPG





255 116.8km AIR Intersection.JPG



256 116.8km AIR Intersection.JPG



257 116.8km AIR Intersection.JPG



258 116.8km AIR Intersection.JPG



259 116.8km AIR Intersection.JPG



260 116.8km AIR Intersection.JPG





263 117km Outbound.JPG



264 117km Flying Fox Access.JPG



265 117km Flying Fox Access.JPG



266 117.0km Flying Fox Access.JPG



268 118.4km Outbound.JPG



269 118.4km Inbound.JPG





273 119.7km Outbound.JPG



274 119.7km Outbound.JPG



275 120.8km Outbound.JPG



276 120.8km Outbound.JPG



278 130.3km Outbound.JPG



279 130.3km Outbound.JPG





282 130.3km Lonesome Dove Stn.JPG



284 133.1km Outbound.JPG



286 133.1km Outbound.JPG



287 135km Outbound.JPG



288 135km Outbound.JPG



289 136.3km Outbound.JPG





293 136.9km Outbound.JPG



294 136.9km Outbound.JPG



295 137km Outbound.JPG



296 137km Outbound.JPG



297 137.2km Outbound.JPG



298 137.3km Outbound.JPG





304 141.2km Outbound.JPG



305 141.2km Outbound.JPG



306 141.2km Outbound.JPG



307 141.2km Outbound.JPG



308 141.2km Outbound.JPG



310 143.7km Outbound.JPG





313 145.8km Outbound.JPG



314 145.8km Outbound.JPG



316 146.2km Outbound.JPG



317 146.2km Outbound.JPG



318 146.2km Outbound.JPG



319 147.7km Outbound.JPG





323 149.0km Outbound.JPG



325 151.6km Outbound.JPG



326 151.6km Inbound.JPG



327 151.6km Outbound.JPG



328 151.6km Outbound.JPG



329 151.6km Inbound.JPG





332 151.6km Inbound.JPG



333 151.6km Outbound.JPG



336 152.2km Outbound.JPG



337 152.2km Sherwin Ck Outbound.JPG



338 152.2km Sherwin Ck Outbound.JPG



339 152.2km Outbound.JPG





344 159.4km Outbound.JPG



345 159.4km Mt McMinn Stn.JPG



346 159.4km Mt McMinn Stn.JPG



347 159.7km Outbound.JPG



348 166.9km Outbound.JPG



349 166.9km Outbound.JPG





352 166.9km Outbound.JPG



354 170.9km Sandy Ck Outbound.JPG



355 170.9km Sandy Ck Outbound.JPG



356 170.9km Sandy Ck Outbound.JPG



357 170.9km Sandy Ck Outbound.JPG



358 170.9km Sandy Ck Outbound.JPG

6 Appendix B – Road Closure & Restrictions

Road Reporting : NT Network 2004 - 2012

#OBSTRUCTION	ROAD	ROAD NAME	PRPFR	DISTFR (kms)	CHFRM (kms)	PRPFRMDISC	PRPTO	DISTTO	CHTO	PRPFRMTO	RESTRICTIONDESC	OBSTCODEDESC	OBSTFRM	OBSTTO
19	32	ROPER HIGHWAY	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	IMPASSABLE	FLOODING	31/12/2004 9:00 AM	7/04/2005 5:00 PM
26	32	ROPER HIGHWAY	35	0.60	175.17	ROPER BAR CAUSEWAY APPROACH	35	0.60	175.17	ROPER BAR CAUSEWAY APPROACH	IMPASSABLE	FLOODING	29/12/2004 9:00 AM	7/04/2005 5:00 PM
260	32	ROPER HIGHWAY	20	5.00	105.43	PACKSADDLE CREEK BRIDGE APP ABUTMEN	20	5.00	105.43	PACKSADDLE CREEK BRIDGE APP ABUTMEN	WITH CAUTION	ROAD DAMAGE	10/06/2005 9:00 AM	10/10/2005 5:00 PM
485	32	ROPER HIGHWAY	35	0.01	174.58	ROPER BAR CAUSEWAY APPROACH	35	0.12	174.69	ROPER BAR CAUSEWAY APPROACH	HIGH CLEARANCE 4WD ONLY	FLOODING	11/01/2006 9:00 AM	12/04/2006 5:00 PM
555	32	ROPER HIGHWAY	1	0.00	0.00	STUART HIGHWAY INTERSECTION	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	WITH CAUTION	WATER OVER ROAD	25/01/2006 9:00 AM	12/04/2006 5:00 PM
643	32	ROPER HIGHWAY	16	0.00	80.13	STRANGWAYS CREEK WEST ABUTMNT	16	0.00	80.13	STRANGWAYS CREEK WEST ABUTMNT	IMPASSABLE	FLOODING	21/03/2006 9:00 AM	12/04/2006 5:00 PM
782	32	ROPER HIGHWAY	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	IMPASSABLE	FLOODING	11/05/2006 9:00 AM	24/05/2006 5:00 PM
852	32	ROPER HIGHWAY	3	5.00	16.03	GRID	3	5.12	16.15	GRID	DETOUR	ROAD WORKS	4/10/2006 9:00 AM	13/10/2006 5:00 PM
992	32	ROPER HIGHWAY	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	IMPASSABLE	FLOODING	24/01/2007 11:40 AM	12/06/2007 10:45 AM
1505	32	ROPER HIGHWAY	29	0.00	163.21	HELLS GATE APP ABUTMENT	29	3.00	166.21	HELLS GATE APP ABUTMENT	IMPASSABLE	FLOODING	5/01/2007 9:30 AM	11/01/2008 9:00 AM
1610	32	ROPER HIGHWAY	29	0.00	163.21	HELLS GATE APP ABUTMENT	29	0.00	163.21	HELLS GATE APP ABUTMENT	IMPASSABLE	FLOODING	25/02/2008 4:00 PM	19/03/2008 10:30 AM
1626	32	ROPER HIGHWAY	16	0.00	80.13	STRANGWAYS CREEK WEST ABUTMNT	16	0.00	80.13	STRANGWAYS CREEK WEST ABUTMNT	IMPASSABLE	FLOODING	27/02/2008 1:00 PM	14/03/2008 11:30 AM
1948	32	ROPER HIGHWAY	1	0.00	0.00	STUART HIGHWAY INTERSECTION	30	0.00	172.84	NATHAN RIVER ROAD INTERSECTION	WITH CAUTION	WATER OVER ROAD	24/12/2008 9:00 AM	16/02/2009 11:00 AM
1966	32	ROPER HIGHWAY	29	0.00	163.21	HELLS GATE APP ABUTMENT	29	0.00	163.21	HELLS GATE APP ABUTMENT	IMPASSABLE	FLOODING	29/12/2008 11:30 AM	14/01/2009 2:30 PM
2107	32	ROPER HIGHWAY	1	0.00	0.00	STUART HIGHWAY INTERSECTION	5	0.00	26.30	JILKMINGAN ACCESST/O LHS	IMPASSABLE	WATER OVER ROAD	12/02/2009 12:30 PM	16/02/2009 11:00 AM
2117	32	ROPER HIGHWAY	1	0.00	0.00	STUART HIGHWAY INTERSECTION	30	0.00	172.84	NATHAN RIVER ROAD INTERSECTION	HIGH CLEARANCE 4WD ONLY	ROAD DAMAGE	13/05/2009 8:30 AM	15/05/2009 11:30 AM
2351	32	ROPER HIGHWAY	27	0.00	133.77	END OF BITUMEN	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	WITH CAUTION	ROAD WORKS	22/12/2009 12:00 PM	1/02/2010 9:00 AM
2512	32	ROPER HIGHWAY	27	0.00	133.77	END OF BITUMEN	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	4WD ONLY	WATER OVER ROAD	4/02/2010 2:00 PM	4/03/2010 11:30 AM
2585	32	ROPER HIGHWAY	16	0.00	80.13	STRANGWAYS CREEK WEST ABUTMNT	16	0.02	80.15	STRANGWAYS CREEK WEST ABUTMNT	IMPASSABLE	FLOODING	28/02/2010 3:00 PM	4/03/2010 11:30 AM
2628	32	ROPER HIGHWAY	1	0.00	0.00	STUART HIGHWAY INTERSECTION	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	WITH CAUTION	WATER OVER ROAD	4/03/2010 11:30 AM	30/03/2010 1:40 PM
2688	32	ROPER HIGHWAY	27	0.00	133.77	END OF BITUMEN	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	HIGH CLEARANCE 4WD ONLY	CHANGING SURFACE CONDITIONS	30/03/2010 1:40 PM	6/04/2010 1:30 PM
2698	32	ROPER HIGHWAY	1	0.00	0.00	STUART HIGHWAY INTERSECTION	27	0.00	133.77	END OF BITUMEN	WEIGHT AND OR VEHICLE TYPE RESTRICTION	100% LEGAL AXLE GROUP MASS LIMITS, MAXIMUM 7 AXLES	31/03/2010 2:50 PM	6/04/2010 3:30 PM
2709	32	ROPER HIGHWAY	29	0.00	163.21	HELLS GATE APP ABUTMENT	29	0.00	163.21	HELLS GATE APP ABUTMENT	IMPASSABLE	FLOODING	2/02/2010 5:20 PM	5/04/2010 12:20 PM
3350	32	ROPER HIGHWAY	16	0.00	80.13	STRANGWAYS CREEK WEST ABUTMNT	16	0.00	80.13	STRANGWAYS CREEK WEST ABUTMNT	IMPASSABLE	FLOODING	8/02/2011 10:30 AM	14/02/2011 2:00 PM
3395	32	ROPER HIGHWAY	16	0.00	80.13	STRANGWAYS CREEK WEST ABUTMNT	16	0.00	80.13	STRANGWAYS CREEK WEST ABUTMNT	WITH CAUTION	WATER OVER ROAD	14/02/2011 2:00 PM	7/03/2011 1:30 PM
3541	32	ROPER HIGHWAY	29	0.00	163.21	HELLS GATE APP ABUTMENT	29	0.00	163.21	HELLS GATE APP ABUTMENT	IMPASSABLE	FLOODING	1/02/2011 3:30 PM	7/03/2011 3:30 PM
3569	32	ROPER HIGHWAY	16	0.00	80.13	STRANGWAYS CREEK WEST ABUTMNT	16	0.00	80.13	STRANGWAYS CREEK WEST ABUTMNT	IMPASSABLE	FLOODING	7/03/2011 3:30 PM	30/03/2011 3:45 PM
3613	32	ROPER HIGHWAY	1	0.00	0.00	STUART HIGHWAY INTERSECTION	32	0.00	173.87	ROPER BAR STORE ACCESS	WEIGHT AND OR VEHICLE TYPE RESTRICTION	OVERMASS RESTRICTION LEVEL 2	11/03/2011 10:00 AM	17/03/2011 4:00 PM
3636	32	ROPER HIGHWAY	1	0.00	0.00	STUART HIGHWAY INTERSECTION	5	0.00	26.30	JILKMINGAN ACCESST/O LHS	IMPASSABLE	FLOODING	15/03/2011 10:00 AM	17/03/2011 5:00 PM
3667	32	ROPER HIGHWAY	1	0.00	0.00	STUART HIGHWAY INTERSECTION	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	WEIGHT AND OR VEHICLE TYPE RESTRICTION	MAXIMUM GVM 8 TONNE	17/03/2011 5:00 PM	30/03/2011 3:45 PM
3749	32	ROPER HIGHWAY	1	0.00	0.00	STUART HIGHWAY INTERSECTION	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	WEIGHT AND OR VEHICLE TYPE RESTRICTION	80% LEGAL AXLE GROUP MASS LIMITS, MAXIMUM 13 AXLES	18/04/2011 4:40 PM	6/05/2011 11:30 AM
3750	32	ROPER HIGHWAY	27	0.00	133.77	END OF BITUMEN	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	WEIGHT AND OR VEHICLE TYPE RESTRICTION	MAXIMUM GVM 8 TONNE	30/03/2011 3:45 PM	18/04/2011 4:37 PM
3770	32	ROPER HIGHWAY	16	0.00	80.13	STRANGWAYS CREEK WEST ABUTMNT	29	0.00	163.21	HELLS GATE APP ABUTMENT	IMPASSABLE	FLOODING	1/04/2011 5:00 PM	18/04/2011 8:00 AM
3895	32	ROPER HIGHWAY	1	0.00	0.00	STUART HIGHWAY INTERSECTION	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	WEIGHT AND OR VEHICLE TYPE RESTRICTION	100% LEGAL AXLE GROUP MASS LIMITS,MAXIMUM 13 AXLES	6/05/2011 12:00 PM	9/05/2011 3:30 PM
3953	32	ROPER HIGHWAY	28	0.00	148.89	SHERWIN CK APP ABUTMENT	29	0.00	163.21	HELLS GATE APP ABUTMENT	WITH CAUTION	WATER OVER ROAD	2/06/2011 3:30 PM	14/06/2011 4:00 PM
3970	32	ROPER HIGHWAY	28	0.00	148.89	SHERWIN CK APP ABUTMENT	29	0.00	163.21	HELLS GATE APP ABUTMENT	WITH CAUTION	ROAD DAMAGE	17/06/2011 4:45 PM	14/10/2011 3:15 PM
3971	32	ROPER HIGHWAY	3	0.00	11.03	GRID	5	0.00	26.30	JILKMINGAN ACCESST/O LHS	WITH CAUTION	WATER OVER ROAD	17/06/2011 5:30 PM	21/11/2011 2:00 PM
4026	32	ROPER HIGHWAY	15	0.00	63.52	MOROAK ROAD INTERSECTION	17	0.00	86.81	MAYHEW CREEK WEST ABUTMENT	WITH CAUTION	ROAD WORKS	6/09/2011 4:00 PM	10/10/2011 2:30 PM
4149	32	ROPER HIGHWAY	27	0.00	133.77	END OF BITUMEN	35	0.00	174.57	ROPER BAR CAUSEWAY APPROACH	WEIGHT AND OR VEHICLE TYPE RESTRICTION	80% LEGAL AXLE GROUP MASS LIMITS	23/11/2011 4:30 PM	30/11/2011 4:30 PM

7 Appendix C – Accident Data

N-2600-09-RP002-Roper River Iron Ore Project - Traffic Management Report														56				Injury Codes				Vehicle sequence No. and it's direction of travel								
Accident	Date	Time	Day	Type	Units	Category ?	Relate ?	ROW No	Road Name	Suburb/Area	From ID	Direction	Nearest ID Mrk	Intersection	Lighting	Dens. Traffic	1	2	3	4	1	2	3	4	5	6	7	Latitude	Longitude	
96835	12/02/2002	1900	TU	03	1	N	Y	70	ROPER HWY	CHATTERHOOCHEE	4 km 200 metres	E-EAST	LONESOME DOVE STATION		02	04	0	1	1	1	E	-	-	-	-	-	-	-	-14.764	134.1768
97424	1/06/2002	930	SA	01	1	Y	N	74	ROPER HWY	MATARANKA	4 km 400 metres	E-EAST	STUART HWY		01	01	0	1	0	0	W	-	-	-	-	-	-	-14.9943	133.1188	
101257	16/05/2003	1030	FR	01	1	Y	N	74	ROPER HWY	ELSEY	6 km 100 metres	E-EAST	JILKINGGAN COMMUNITY		01	04	0	0	0	1	W	-	-	-	-	-	-	-14.9899	133.3586	
101510	19/04/2003	700	SA	03	1	N	N	70	ROPER HWY	ROPER BAR					01	04	0	0	0	0	9	-	-	-	-	-	-	-14.7019	134.4461	
106052	22/06/2004	1700	TU	03	1	N	N	70	ROPER HWY	MATARANKA	10 km	E-EAST	STUART HWY		01	01	0	0	0	1	E	-	-	-	-	-	-	-15.0128	133.1663	
106053	2/05/2004	1345	SU	03	1	N	N	71	ROPER HWY	CHATTERHOOCHEE	50 km	W-WEST	ROPER BAR STORE		01	01	0	0	0	4	W	-	-	-	-	-	-	-14.8149	134.1301	
107440	2/08/2004	1605	MO	01	1	Y	N	74	ROPER HWY	ROPER BAR	8 km	W-WEST	NATHAN RIVER RD		01	04	0	0	2	0	E	-	-	-	-	-	-	-14.7044	134.4341	
107447	24/09/2004	1500	FR	01	1	Y	N	74	ROPER HWY	ROPER BAR	1 km	W-WEST	NATHAN RIVER RD		01	04	0	1	0	0	E	-	-	-	-	-	-	-14.7204	134.4941	
108244	20/11/2004	1330	SA	01	1	Y	N	88	ROPER HWY	MOUNT MCMINN	23 km 700 metres	W-WEST	ROPER BAR STORE		01	04	0	1	0	0	E	-	-	-	-	-	-	-14.6932	134.3047	
109716	24/04/2005	1730	SU	14	1	Y	N	67	ROPER HWY	ELSEY	78 km 900 metres	E-EAST	STUART HWY		05	01	0	1	0	1	W	-	-	-	-	-	-	-14.9164	133.7497	
109718	1/05/2005	1930	SU	12	1	Y	N	67	ROPER HWY	ELSEY	24 km 200 metres	E-EAST	STUART HWY		02	01	0	0	0	0	W	-	-	-	-	-	-	-14.9976	133.2902	
113966	25/02/2006	10	SA	01	1	N	Y	73	ROPER HWY	FLYING FOX	91 km 700 metres	W-WEST	NGUKURR POLICE STATION		05	01	1	2	0	0	E	-	-	-	-	-	-	-14.8746	134.0076	
114854	23/04/2006	1000	SU	01	1	Y	N	74	ROPER HWY	MATARANKA	3 km 500 metres	E-EAST	STUART HWY		01	01	0	0	0	0	W	-	-	-	-	-	-	-14.9933	133.1094	
115266	18/05/2006	1750	TH	01	1	Y	Y	74	ROPER HWY	MATARANKA	6 km 400 metres	E-EAST	STUART HWY		01	01	0	2	2	0	E	-	-	-	-	-	-	-14.9987	133.1351	
115550	27/06/2006	1630	TU	01	1	Y	N	74	ROPER HWY	ELSEY	88 km	W-WEST	NGUKURR		01	01	0	0	0	0	E	-	-	-	-	-	-	-14.97	133.5175	
116162	8/08/2006	1920	TU	14	1		N	99	ROPER HWY	FLYING FOX	100 km	W-WEST	NGUKURR COMMUNITY		99	99	0	0	0	0	E	-	-	-	-	-	-	-14.9064	133.9339	
116854	7/09/2006	2030	TH	01	1	N	N	70	ROPER HWY	FLYING FOX	87 km 700 metres	W-WEST	NGUKURR COMMUNITY		05	01	0	11	0	0	E	-	-	-	-	-	-	-14.8542	134.0358	
116981	29/09/2006	2330	FR	01	1	Y	N	74	ROPER HWY	MOUNT MCMINN	1 km 800 metres	W-WEST	HELLS GATE CREEK		05	01	0	4	0	0	E	-	-	-	-	-	-	-14.7064	134.4034	
118596	29/12/2006	1730	FR	10	2	Y	N	20	ROPER HWY	ROPER VALLEY	99 km	E-EAST	STUART HWY		01	01	0	0	0	0	E	W	-	-	-	-	-	-14.9043	133.9289	
119876	23/05/2007	820	WE	03	1	Y	N	88	ROPER HWY	LIMMEN	9 km 800 metres	W-WEST	ROPER BAR		01	01	0	0	0	0	E	-	-	-	-	-	-	-14.7068	134.4261	
119897	26/05/2007	600	SA	03	1	N	Y	72	ROPER HWY	WILTON	1 km	W-WEST	WILTON RIVER CROSSING		01	01	0	0	0	0	E	-	-	-	-	-	-	-14.7001	134.5595	
119957	13/10/2004	2230	WE	03	1	N	N	71	ROPER HWY	LIMMEN	2 km	W-WEST	BADAWARRKA		05	01	0	1	0	0	W	-	-	-	-	-	-	-14.7089	134.4234	
120497	23/06/2007	1600	SA	01	1	Y	N	88	ROPER HWY	FLYING FOX	24 km	W-WEST	ROPER BAR		01	01	0	0	0	0	W	-	-	-	-	-	-	-14.6995	134.3006	
120831	14/07/2007	0	SA	01	1	Y	N	74	ROPER HWY	LIMMEN	500 metres	W-WEST	SANDY CREEK		01	01	0	1	0	0	W	-	-	-	-	-	-	-14.7029	134.4514	
122087	26/07/2007	2240	TH	03	1	N	Y	71	ROPER HWY	LIMMEN	5 km	W-WEST	ROPER BARCROSSING		05	04	0	2	0	0	E	-	-	-	-	-	-	-14.7086	134.4756	
123436	9/02/2008	1630	SA	01	1	N	N	70	ROPER HWY	FLYING FOX	21 km	E-EAST	HODGSON RIVER RD		01	01	0	0	0	0	E	-	-	-	-	-	-	-14.7757	134.1628	
124239	13/10/2007	1725	SA	01	1	N	N	71	ROPER HWY	ELSEY	22 km 600 metres	E-EAST	STUART HWY		01	01	0	0	0	0	E	-	-	-	-	-	-	-15.0058	133.2769	
125641	7/05/2008	100	WE	03	1	N	N	70	ROPER HWY	LIMMEN	30 km	W-WEST	HODGSON RIVER RD		05	04	0	0	0	1	N	-	-	-	-	-	-	-14.9164	133.7501	
126849	9/10/2008	1400	TH	01	1	Y	N	88	ROPER HWY	FLYING FOX	30 km	E-EAST	HODGSON RIVER RD		01	04	0	2	0	0	W	-	-	-	-	-	-	-14.7469	134.2325	
127214	28/11/2008	1820	FR	01	1	N	Y	71	ROPER HWY	NGUKURR			ROPER BAR RD		01	04	0	0	1	0	S	-	-	-	-	-	-	-14.7195	134.5076	
127525	14/12/2008	612	SU	01	1	Y	N	74	ROPER HWY	ROPER BAR			UNKNOWN	UNKNOWN	01	01	0	0	1	0	E	-	-	-	-	-	-	-14.7105	134.5109	
127577	19/12/2008	1700	FR	01	1	Y	N	74	ROPER HWY	FLYING FOX	20 km	W-WEST	ROPER BAR RD		02	04	0	0	0	0	W	-	-	-	-	-	-	-14.6895	134.3337	
128631	1/05/2009	5	FR	04	2	Y	N	03	ROPER HWY	MATARANKA	8 km	E-EAST	STUART HWY		05	01	1	0	0	0	E	9	-	-	-	-	-	-15.0047	133.1484	
129571	22/05/2009	1600	FR	01	1	Y	N	88	ROPER HWY	NUMBURINDI	82 km	W-WEST	NUMBULWAR RD		01	01	0	0	0	0	W	-	-	-	-	-	-	-14.8338	134.0886	
130675	12/12/2008	701	FR	03	1	N	N	73	ROPER HWY	FLYING FOX	125 km	E-EAST	STUART HWY		01	04	0	0	0	0	E	-	-	-	-	-	-	-14.8149	134.1301	
130691	15/11/2009	1500	SU	01	1	N	N	86	ROPER HWY	FLYING FOX	95 km	W-WEST	STUART HWY		01	04	0	1	1	0	W	-	-	-	-	-	-	-14.8954	133.8819	
130753	11/12/2009	1730	FR	12	1	Y	N	67	ROPER HWY	ELSEY	5 km	E-EAST	JILKMINGGAN ACCESS ROAD		06	01	0	0	0	0	W	-	-	-	-	-	-	-14.9862	133.3506	
131533	20/03/2010	2000	SA	04	2	Y	N	00	ROPER HWY	MATARANKA	8 km	E-EAST	STUART HWY		05	01	0	0	1	0	W	9	-	-	-	-	-	-15.0046	133.1482	
131848	12/06/2010	1400	SA	01	1	N	N	81	ROPER HWY	FLYING FOX	109 km	E-EAST	STUART HWY		01	02	1	1	0	0	W	-	-	-	-	-	-	-14.8788	134.0012	
131997	10/07/2010	1300	SA	03	1	N	N	99	ROPER HWY	LIMMEN	100 km	E-EAST	STUART HWY		01	01	0	0	0	0	E	-	-	-	-	-	-	-14.9048	133.9299	
133110	13/04/2009	1615	MO	01	1	N	N	73	ROPER HWY	ELSEY	23 km	E-EAST	STUART HWY		01	04	0	0	0	0	E	-	-	-	-	-	-	-15.0036	133.2805	
134027	6/08/2009	1008	TH	14	1	Y	N	67	ROPER HWY	ELSEY	55 km	E-EAST	STUART HWY		05	04	0	0	0	0	E	-	-	-	-	-	-	-14.9729	133.513	
134251	3/09/2009	2300	TH	01	1	N	N	80	ROPER HWY	WILTON	500 metres	E-EAST	ROPER BAR RD		05	01	0	0	0	0	W	-	-	-	-	-	-	-14.7093	134.5138	
134791	19/11/2009	1840	TH	14	1	Y	N	67	ROPER HWY	ELSEY	8 km	W-WEST	MOROAK STATION TURNOFF		02	04	0	0	0	0	W	-	-	-	-	-	-	-14.9611	133.5607	
135625	27/09/2010	2320	MO	14	1	Y	N	67	ROPER HWY	FLYING FOX	50 km	S-SOUTH	ROPER BAR RD		05	04	0	0	0	0	N	-	-	-	-	-	-	-14.8176	134.1258	
135730	18/04/2011	1230	MO	01	1	N	N	70	ROPER HWY	ELSEY	22 km	E-EAST	STUART HWY		01	01	0	0	0	0	E	-	-	-	-	-	-	-15.0076	133.2717	
135808	26/04/2011	1300	TU	01	1	Y	N	88	ROPER HWY	ELSEY	60 km	E-EAST	STUART HWY		01	01	0	0	0	0	E	-	-	-	-	-	-	-14.933	133.5863	
136456	22/06/2011	1206	WE	01	1	N	N	70	ROPER HWY	LIMMEN	12 km	W-WEST	ROPER BAR RD		05	04	0	0	0	0	W	-	-	-	-	-	-	-14.711	134.409	
136534	7/09/2011	600	WE	10	1	N	N	71	ROPER HWY	ELSEY	22 km	E-EAST	STUART HWY		99	01	0	0	0	0	E	-	-	-	-	-	-	-15.0074	133.2726	
136959	5/11/2011	900	SA	01	1	N	N	83	ROPER HWY	LIMMEN	8 km	W-WEST	ROPER BAR RD		01	01	0	1	4	0	E	-	-	-	-	-	-	-14.7017	134.4435	
137368	24/01/2012	2030	TU	04	2	N	N	06	ROPER HWY	ELSEY	12 km	E-EAST	STUART HWY		05	04	1	0	0	0	E	9	-	-	-	-	-	-15.0227	133.1881	
137455	18/12/2011	1325	SU	01	1	N	N	70	ROPER HWY	NGUKURR	1 km	E-EAST	ROPER BAR		06	01	0	1	0	0	E	-	-	-	-	-	-	-14.7073	134.5192	
137898	16/02/2012	1302	TH	01	1	N	N	70	ROPER HWY	FLYING FOX	59 km	W-WEST	ROPER BAR RD		01	04	0	0	0	0	E	-	-	-	-	-	-	-14.8501	134.0448	
138224	28/03/2012	1800	WE	01	1	N	N	70	ROPER HWY	WILTON	8 km	N-NORTH	ROPER BAR		02	04	0	0	0	0	W	-	-	-	-	-	-	-14.6933	134.562	

Day of Accident

C_ACCIDENT_DAY	FR	FRIDAY
C_ACCIDENT_DAY	MO	MONDAY
C_ACCIDENT_DAY	SA	SATURDAY
C_ACCIDENT_DAY	SU	SUNDAY
C_ACCIDENT_DAY	TH	THURSDAY
C_ACCIDENT_DAY	TU	TUESDAY
C_ACCIDENT_DAY	WE	WEDNESDAY

Type of Accident

C_ACCIDENT_TYPE	01	OVERTURNED
C_ACCIDENT_TYPE	02	FELL OFF MOTORCYCLE
C_ACCIDENT_TYPE	03	RAN OFF ROAD
C_ACCIDENT_TYPE	04	HIT PEDESTRIAN
C_ACCIDENT_TYPE	05	HIT FIXED OBJECT
C_ACCIDENT_TYPE	06	HIT OTHER OBJECT
C_ACCIDENT_TYPE	07	HIT PARKED VEHICLE
C_ACCIDENT_TYPE	08	ANGLE COLLISION
C_ACCIDENT_TYPE	09	REAR END
C_ACCIDENT_TYPE	10	HEAD ON
C_ACCIDENT_TYPE	11	SIDE SWIPE
C_ACCIDENT_TYPE	12	HIT CATTLE/BUFFALO
C_ACCIDENT_TYPE	13	HIT HORSE/CAMEL
C_ACCIDENT_TYPE	14	HIT OTHER ANIMAL
C_ACCIDENT_TYPE	15	OTHER ACCIDENT
C_ACCIDENT_TYPE	16	HIT LIGHT POLE
C_ACCIDENT_TYPE	17	HIT POWER POLE
C_ACCIDENT_TYPE	99	UNKNOWN

Injury

C_INJURY	01	FATAL
C_INJURY	02	TREATED ADMITTED
C_INJURY	03	TREATED NOT ADMITTED
C_INJURY	04	INJURED NOT SEEKING TREATMENT

Light Conditions

C_LIGHTING	01	DAYLIGHT
C_LIGHTING	02	DAWN/DUSK
C_LIGHTING	03	DARK - STREET LIGHTS ON
C_LIGHTING	04	DARK - STREET LIGHTS OFF
C_LIGHTING	05	DARK - NO STREET LIGHTS
C_LIGHTING	06	OTHER
C_LIGHTING	99	NOT KNOWN

Traffic Density

C_TRAFFIC_DEN	01	LIGHT
C_TRAFFIC_DEN	02	MEDIUM
C_TRAFFIC_DEN	03	HEAVY
C_TRAFFIC_DEN	04	NIL
C_TRAFFIC_DEN	99	NOT KNOWN

Road User Movement (RUM)

C_VEHICLE_VMC1	00	NEAR SIDE PEDESTRIAN
C_VEHICLE_VMC1	01	EMERGING PEDESTRIAN
C_VEHICLE_VMC1	02	FAR SIDE PEDESTRIAN
C_VEHICLE_VMC1	03	PLAY, WORK, LAY OR STAND C'WAY
C_VEHICLE_VMC1	04	WALKING WITH TRAFFIC

C_VEHICLE_VMC1	06	ON FOOTPATH OR MEDIAN
C_VEHICLE_VMC1	07	DRIVEWAY
C_VEHICLE_VMC1	09	OTHER PEDESTRIAN
C_VEHICLE_VMC1	10	CROSS TRAFFIC
C_VEHICLE_VMC1	11	RIGHT FAR
C_VEHICLE_VMC1	12	LEFT FAR
C_VEHICLE_VMC1	13	RIGHT NEAR
C_VEHICLE_VMC1	14	TWO A TURNING
C_VEHICLE_VMC1	15	RIGHT LEFT FAR
C_VEHICLE_VMC1	16	LEFT NEAR
C_VEHICLE_VMC1	17	LEFT RIGHT FAR
C_VEHICLE_VMC1	18	TWO LEFT TURNING
C_VEHICLE_VMC1	19	OTHER ADJACENT
C_VEHICLE_VMC1	20	HEAD ON (AND OVERTAKING)
C_VEHICLE_VMC1	21	RIGHT THRU
C_VEHICLE_VMC1	22	LEFT THRU
C_VEHICLE_VMC1	23	RIGHT LEFT
C_VEHICLE_VMC1	24	RIGHT RIGHT
C_VEHICLE_VMC1	25	LEFT LEFT
C_VEHICLE_VMC1	29	OTHER OPPOSING DIRECTION
C_VEHICLE_VMC1	30	REAR END
C_VEHICLE_VMC1	31	LEFT REAR
C_VEHICLE_VMC1	32	RIGHT REAR
C_VEHICLE_VMC1	33	LANE SIDE SWIPE
C_VEHICLE_VMC1	34	LANE CHANGE RIGHT
C_VEHICLE_VMC1	35	LANE CHANGE LEFT
C_VEHICLE_VMC1	36	RIGHT TURN SIDE SWIPE
C_VEHICLE_VMC1	37	LEFT TURN SIDE SWIPE
C_VEHICLE_VMC1	39	OTHER SAME DIRECTION
C_VEHICLE_VMC1	40	U TURN
C_VEHICLE_VMC1	41	U TURN INTO OBJ. OR PARKED VEH
C_VEHICLE_VMC1	42	LEAVING PARKING
C_VEHICLE_VMC1	43	ENTERING PARKING
C_VEHICLE_VMC1	44	PARKING VEHICLES
C_VEHICLE_VMC1	45	REVERSING
C_VEHICLE_VMC1	46	REV. INTO OBJ. OR PARKED VEH.
C_VEHICLE_VMC1	47	REVERSING FROM DRIVEWAY
C_VEHICLE_VMC1	48	FROM FOOTPATH
C_VEHICLE_VMC1	49	OTHER MANOEUVRING
C_VEHICLE_VMC1	50	HEAD ON
C_VEHICLE_VMC1	51	OUT OF CONTROL
C_VEHICLE_VMC1	52	PULLING OUT
C_VEHICLE_VMC1	53	OVERTAKING TURNING
C_VEHICLE_VMC1	54	CUTTING IN
C_VEHICLE_VMC1	55	PULLING OUT
C_VEHICLE_VMC1	59	OTHER OVERTAKING
C_VEHICLE_VMC1	60	PARKED
C_VEHICLE_VMC1	61	DOUBLED PARKED
C_VEHICLE_VMC1	62	ACCIDENT OR BREAKDOWN
C_VEHICLE_VMC1	63	VEHICLE DOOR
C_VEHICLE_VMC1	64	PERM. OBSTRUCTION ON CAR'WAY
C_VEHICLE_VMC1	65	TEMPORARY ROADWORKS
C_VEHICLE_VMC1	66	STRUCK OBJECT ON CAR'WAY
C_VEHICLE_VMC1	67	ANIMAL - NOT RIDDEN
C_VEHICLE_VMC1	69	OTHER ON PATH
C_VEHICLE_VMC1	70	OFF CAR'WAY TO LEFT
C_VEHICLE_VMC1	71	LEFT OFF CAR'WAY TO OBJ OR VEH
C_VEHICLE_VMC1	72	OFF CAR'WAY TO RIGHT

C_VEHICLE_VMC1	74	OUT OF CONTROL ON CAR'WAY
C_VEHICLE_VMC1	75	OFF EDGE OF ROAD -INTERSECTION
C_VEHICLE_VMC1	79	OTHER OFF PATH, ON STRAIGHT
C_VEHICLE_VMC1	80	OFF C'WAY LEFT ON RIGHT BEND
C_VEHICLE_VMC1	81	OFF C'WAY L ON R BEND OBJ/VEH
C_VEHICLE_VMC1	82	OFF C'WAY RIGHT ON RIGHT BEND
C_VEHICLE_VMC1	83	OFF C'WAY R ON R BEND OBJ/VEH
C_VEHICLE_VMC1	84	OFF C'WAY RIGHT ON LEFT BEND
C_VEHICLE_VMC1	85	OFF C'WAY R ON L BEND OBJ/VEH
C_VEHICLE_VMC1	86	OFF C'WAY LEFT ON LEFT BEND
C_VEHICLE_VMC1	87	OFF C'WAY L ON L BEND OBJ/VEH
C_VEHICLE_VMC1	88	OUT OF CONTROL ON C'WAY
C_VEHICLE_VMC1	89	OTHER ON CURVE
C_VEHICLE_VMC1	90	FALLEN FROM VEHICLE
C_VEHICLE_VMC1	91	LOAD OR MISSILE STRUCK VEHICLE
C_VEHICLE_VMC1	92	STRUCK BY TRAIN/AEROPLANE
C_VEHICLE_VMC1	93	PARKED VEH RUNAWAY HIT OBJ
C_VEHICLE_VMC1	94	PARKED VEH RUNAWAY INTO VEH
C_VEHICLE_VMC1	95	STRUCK WHILE BOARD/ALIGHT VEH
C_VEHICLE_VMC1	98	OTHER
C_VEHICLE_VMC1	99	NOT KNOWN



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