

# Shippers' Manual

**Version/Series 1: Revision 09**

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## SECTION 1: INTRODUCTION

- 1.1 This document, the Shippers Manual, is an annexure to the Transnet Pipelines Standard Terms and Conditions for the Conveyance of Liquid Hydrocarbon Products and should be read in conjunction with it.
- 1.2 The Shippers Manual contains rules and requirements related to pipeline facilities, apropos operational and technical procedures and standards, pipeline Product quality specifications, invoicing and payment requirements, and general commercial terms related to transport of liquid hydrocarbon products in the Transnet Pipelines System.
- 1.3 The requirements for Crude Oil are contained in **Appendix 2**.
- 1.4 The Carrier is entitled from time to time to review this Shippers' Manual as deemed appropriate.

## SECTION 2: DEFINITIONS AND ABBREVIATIONS

### 2.1 Definitions of Terms

- 2.1.1 **"Accumulator"** shall mean a tank in which Product is co-mingled and accumulated before injecting into the pipeline or feeder line.
- 2.1.2 **"Accumulator Tank"** shall mean operational tanks throughout the system in which Product is co-mingled and accumulated before injecting into the pipeline or feeder line.
- 2.1.3 **"Agreement"** shall mean the agreement between the Carrier, on the one part, and the Shipper on the other part, relating to the transport of the Shipper's Products by the Carrier using the Carrier's pipelines, and which agreement shall come into being upon the acceptance by the Carrier of the Shipper's Nomination/Order for the transport of the Shipper's Products.
- 2.1.4 **"Amendments"** shall mean a change to a Nomination/Order requested after the 14:00 Tuesday cut-off time for submission of Nominations.
- 2.1.5 **"Batch"** shall mean a quantity of Product handled through the Carrier's pipeline facilities as a unit.
- 2.1.6 **"Battery Limit"** shall mean one or more geographic boundaries, imaginary or real, enclosing a plant or unit being engineered and/or erected, established for the

purpose of providing a means of specifically identifying certain portions of the plant, related groups of equipment, or associated facilities.

- 2.1.7 **“Buffer Material”** shall mean a compound or Product that is injected between two Slugs with different specifications to minimise or prevent unwanted effect of one Product from contaminating another Product.
- 2.1.8 **“Calendar Day”** shall mean any day of the week including weekends and public holidays.
- 2.1.9 **“Carrier”** shall mean Transnet Pipelines, an Operating Division of Transnet SOC Limited.
- 2.1.10 **“Capacity Entitlement”** shall mean the capacity to transport Product in a section of the pipeline as may be allocated by the Carrier to the Shipper from time to time.
- 2.1.11 **“Certificate of Analysis”** shall mean an authenticated document, issued by an accredited laboratory, which certifies the analysis and purity of a Product.
- 2.1.12 **“Consignee”** shall mean any party to whom custody is to be given at the specific instructions of a Shipper when Product is delivered to the relevant Delivery Point.
- 2.1.13 **“Consignee Valve”** shall mean the valve situated in the pipeline between the Carrier and the Consignee which isolates flow between the two systems when closed.
- 2.1.14 **“Construction Battery Limit”** shall mean the tie in point at the Carrier's intake terminal perimeter fence.
- 2.1.15 **“Contamination”** shall mean the addition of material which contains particles, chemicals, or other substances, to a product, which causes the Product to become non-compliant with accepted Pipeline Specifications for that Product.
- 2.1.16 **“Crude Oil Pipeline”** shall mean the pipeline transporting crude oil from Durban to Coalbrook.
- 2.1.17 **“Cycle”** shall mean a period of 1 week starting on a Monday 00:01 and ending on a Sunday 24:00.
- 2.1.18 **“Day”** shall mean a calendar day.
- 2.1.19 **“Delivery”** shall mean the transfer of custody of Product from one party to another.
- 2.1.20 **“Delivery Point”** shall mean any point along the pipeline system equipped to permit delivery of Products from the Pipeline System specified in the Agreement.

- 2.1.21 **“Feeder Line”** shall mean pipelines connecting the Pipeline System with the Shipper's/ Supplier's/ Consignee's plant.
- 2.1.22 **“Firm Monthly Order”** shall mean the Shipper's request for the transportation of a specified volume of Product, submitted on the SAP Portal on the 25th of the month prior to the month in respect of which delivery of the Product is requested.
- 2.1.23 **“Firm Weekly Order”** shall mean the Shipper's request for the transportation of a volume of Product, submitted on the SAP Portal before 14:00 on the Tuesday prior to the cycle in respect of which delivery of the Product is requested.
- 2.1.24 **“Fungible Product”** shall mean Product that is freely exchangeable or replaceable, in whole or in part, for similar product of substantially the same specification
- 2.1.25 **“Hydrocarbon components”** shall mean liquid petroleum constituents that are generally referred to and fall into the following categories, Paraffins, Naphthenes and Aromatics.
- 2.1.26 **“Indicative Order”** shall mean a forecast of anticipated requests for the transportation of Product in the Pipeline System for the following 3 month time period.
- 2.1.27 **“Interface”** shall mean the mixture resulting from the co-mingling between Products that follow each other in the pipeline or feeder line during the course of conveyance.
- 2.1.28 **“Intermixture”** shall mean a mixture of different Products.
- 2.1.29 **“Intermixture tanks”** shall mean operational tanks throughout the Pipeline System for the purpose of handling intermixture.
- 2.1.30 **“Intake”** shall mean the movement of an amount of Product (volume) from the custody of the Shipper/Supplier into the Pipeline System for conveyance to a delivery point by the Carrier.
- 2.1.31 **“Intake Point”** shall mean the Carrier's pump station where Product can be injected into a Pipeline System.
- 2.1.32 **“Line Fill”** shall mean Product that is used to fill the pipeline, or currently in the pipeline owned by shippers] or third party.
- 2.1.33 **“Loss”** shall mean any loss, damage, costs, charges, damages or expenses (including legal and other professional charges and expenses) but excludes all

consequential and/or indirect damages unless stated otherwise in the Agreement or Transnet Pipelines Terms and Conditions.

- 2.1.34 **“Maintenance Valve”** shall mean the valve connecting the Shipper/Supplier and the Carrier's pipeline situated within the Carrier's Intake terminal boundary.
- 2.1.35 **“Need”** shall mean a Shipper's pipeline capacity requirement relevant for capacity entitlement allocation calculations.
- 2.1.36 **“Network Product Losses/ Reconciliation Losses”** shall mean losses across the Pipeline System.
- 2.1.37 **“Nomination/Nominated Volume”** shall mean a request submitted by the Shipper to the Carrier through its Enterprise Resource Planning (ERP) Portal to transport a volume of Product from an Intake Point to a Delivery Point in a given cycle under the terms and conditions of the Agreement.
- 2.1.38 **“Non-Conformance Product”** shall mean a product that does not meet the SANS 1590 pipeline specification or specification specified by the Carrier
- 2.1.39 **“Offspec Return Line”** shall mean a Feeder Line at Intake where Product can be returned from the Carrier to the Shipper/Supplier in the event that it is Non-Conformance Product.
- 2.1.40 **“Operating Battery Limit”** at Intake is the gasket between the Shipper's/Supplier's Maintenance Valve and the first flange on the Carrier's manifold.
- 2.1.41 **“Operations Notice”** shall mean the Carrier's notice to stakeholders containing intake and delivery schedule information.
- 2.1.42 **“Operational Inventory”** shall mean a Product in the Pipeline System that is a prerequisite for the operation of the Pipeline System. Operational Inventory shall include Line Fill and Tank Bottoms plus the working stock requirement of the usable tank capacity.
- 2.1.43 **“Over and Under Delivery”** shall mean the cumulative difference between the volume of Product delivered by the Shipper/Supplier to the Carrier at the Intake Point and the volume of Product Delivered by the Carrier to the Shipper /Consignee at the Delivery Point, over a period of time.
- 2.1.44 **“Party/Parties”** shall mean any one of or collectively the Carrier and the Shipper.
- 2.1.45 **“Pipeline System”** shall mean pipelines operated by the Carrier for the conveyance of petroleum Products between Intake Point and Delivery Points, together with all

Accumulator Tanks, pumping equipment, meters and other appurtenances installed thereon.

- 2.1.46 **“Portal”** shall mean the electronic system provided by the Carrier for use by the Shipper/Supplier/Consignee to enter, approve and amend Nominations for transport of Product.
- 2.1.47 **“Product”** shall mean all grades listed in the SANS 1590 and are driven by market demand and Crude Oil
- 2.1.48 **“Product Grade”** shall mean, any two allowable Unleaded Petrol grade, two allowable Diesel grade Market demand driven and Crude Oil, Light Crude, with density less than 870 kg/m<sup>3</sup>, Medium Crude with density between 870 kg/m<sup>3</sup> to 920 kg/m<sup>3</sup> and Heavy Crude, with density between 920 kg/m<sup>3</sup> to 1000kg/m<sup>3</sup>.
- 2.1.49 **“Product Tanks at the Intermixture Refractionator Plant (IRP)”** shall mean the tanks for receiving of Intermixture at the IRP and storing Refractionated product.
- 2.1.50 **“Rack”** shall mean a supporting structure for a single pipeline or multiple pipelines.
- 2.1.51 **“Re-consign / Re-consignment”** shall mean a change in the scheduled delivery location or Consignee.
- 2.1.52 **“Refined Product”** shall mean all grades listed in the SANS 1590
- 2.1.53 **“Re-processed Product”** shall mean Intermixture that is processed through the Transnet Pipelines IRP.
- 2.1.54 **“Scheduling”** shall mean a task performed by the Carrier’s schedulers to determine time, location, quantity and Product for Intakes and Deliveries.
- 2.1.55 **“Service Charges”** shall mean a fee, set and/- or approved by NERSA and charged by the Carrier to the Shipper/Supplier/Consignee for costs associated with processing changes to orders, requested by the Shipper/Supplier/Consignee, and for any consequential delays.
- 2.1.56 **“Slug”** shall mean a consignment of any particular Product which moves in the pipeline with a specific Intake Point, Consignee and Delivery Point.
- 2.1.57 **“Shipper”** shall mean the Party who gives order to the Carrier to transport Product under the provisions outlined in the Agreement.
- 2.1.58 **“Supplier”** shall mean the Party that is instructed to do the physical injection of Product into the Pipeline System.

- 2.1.59 **“Supplier’s Intake Valve”** shall mean the first TPL valve downstream of the Maintenance Valve as assigned to a Supplier for a specific Product.
- 2.1.60 **“Shipper/Supplier”** shall mean the party that gives the notice to ship and also physically injects the Product into the Pipeline System. If the Shipper and Supplier are different parties then clauses **2.1.55** and **2.1.56** shall apply respectively, as defined by each party’s activity.
- 2.1.61 **“Shipper/Consignee”** shall mean the Party that gives the notice to ship and also takes custody of the Product at the Delivery Point. If the Shipper and Consignee are different parties then clauses **2.1.55** and **2.1.12** shall apply respectively, as defined by each party’s activity.
- 2.1.62 **“Shipper/Supplier/Consignee”** shall mean the Party that gives notice to ship and physically injects the Product into the pipeline and also takes custody of the Product at the Delivery Point. If the Shipper, Supplier and Consignee are different Parties then clauses **2.1.55** and **2.1.56** and **2.1.12** shall apply respectively, as defined by each Party’s activity.
- 2.1.63 **“Tank Bottom”** shall mean the unmovable Product in a tank below the ‘low’ level alarm of the tank.
- 2.1.64 **“Tariff”** shall mean a published list of rates and charges for transportation of Product by pipeline as determined by the NERSA.
- 2.1.65 **“Terms”** shall mean the terms of the Agreement.
- 2.1.66 **“Term and Conditions”** shall mean the Transnet Pipeline Standard Terms and Conditions.
- 2.1.67 **“Tightline - Operations”** shall mean the intake of Product from Shippers directly into the pipeline and not via the Carrier’s Accumulator Tanks.
- 2.1.68 **“Transfer”** shall mean the movement of Products between tanks using Feeder Line/s or inter connection pipeline/s.
- 2.1.69 **“Transition Fuels”** shall mean fuel derived from Bio Mass (e.g. Bio Fuel or Bio-diesel) or any other fuel blends that may be considered as an alternative fuel other than the traditional selections of the various grades of Diesel and Unleaded Petrol.
- 2.1.70 **“Writing”** shall mean any handwritten, typewritten, or printed communication, including any facsimile transmission or electronic mail (email); as written with a corresponding meaning.

Terms used herein in the form as defined in the Terms and Conditions shall have the meaning assigned thereto in the Terms and Conditions.



## 2.2 Definition of Abbreviations

2.2.1	API	American Petroleum Institute
2.2.2	ASTM	American Society of Testing and Materials
2.2.3	COA	Certificate of Analysis
2.2.4	COP	Crude Oil Pipeline
2.2.5	DJP	Durban Johannesburg Pipeline (currently referred to as the 12-inch multi Products pipeline)
2.2.6	DSL	Diesel
2.2.7	ESD	Emergency Shutdown
2.2.8	EDI	Electronic Data Interchange
2.2.9	HDSA	Historically Disadvantaged South Africans
2.2.10	"	Inch
2.2.11	IRP	Intermixture Refractionator Plant
2.2.12	IVW	Island View Terminal
2.1.13	JMP	Jameson Park Terminal
2.2.15	NERSA	National Energy Regulator of South Africa
2.2.16	MPP	Multi Product Pipeline which comprises; PL 1 - 24 inch Durban to Jameson Park pipeline PL 2 - 16 inch Jameson Park to Alrode pipeline PL 3 - 16 inch Alrode to Langlaagte pipeline PL 4 - 16 inch Kendal to Wattloo pipeline
2.2.17	ORTAFS	Oliver Reginald Tambo Airport Fuel Storage
2.2.18	ORTIA	Oliver Reginald Tambo International Airport
2.2.19	PL	Pipeline
2.2.20	RC	Release Certificate
2.2.21	CQ	Certificate of Quality
2.2.22	TPL	Transnet Pipelines
2.2.23	SCADA	Supervisory, Control and Data Acquisition
2,2,23	SAPIA	South African Petroleum Industry Association
2,2,24	SIL	Safety Integrity Level
2.2.25	ULP	Unleaded Petrol

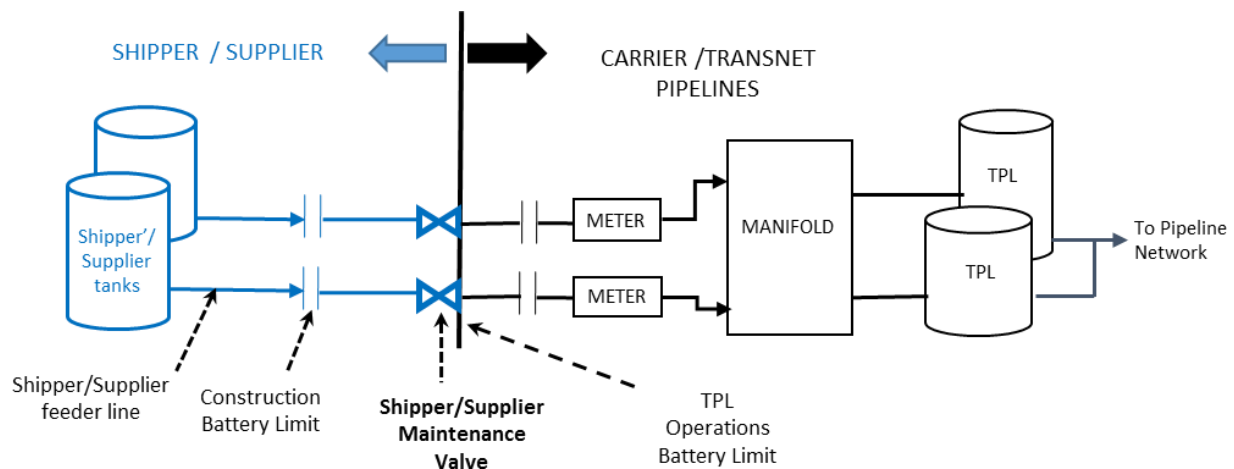
### SECTION 3: INTAKE AND DELIVERY FACILITIES

3.1 Construction, ownership and maintenance of Feeder Lines for the Crude Oil Pipeline would be similar to Refined Products feeder lines subject to conditions as in **Appendix 2**, "Requirements for Crude Oil".

#### 3.2 Construction, Ownership and Maintenance of Feeder Lines at Intake Terminals

3.2.1 The figure 1 below shows a logical diagram for Intake Points and rules as described below.

**Section 3 Figure 1: Logical Diagram of Intake Points**



3.2.2 The Construction Battery Limit is on the perimeter of the Carrier's premises.

3.2.3 The Operating Battery Limit is the gasket between the Supplier's Maintenance Valve and the first flange on the Carrier's manifold.

3.2.4 The Supplier shall construct Feeder Lines from its site up to the Construction Battery Limit. This can be extended to the TPL Operations Battery Limit in compliance with TPL's quality and construction procedures.

3.2.5 The Carrier shall supply and install, on behalf of the Shipper/Supplier, the Maintenance Valve in the Manifold including all upstream pipe work from the Operating Battery Limit to the Construction Battery Limit.

3.2.6 The Feeder Line/s shall terminate at the Shipper/Supplier's Maintenance Valve at the Carrier's site. The Maintenance Valve shall be located within the bunded area of the Manifold.

- 3.2.7 The Shipper/Supplier shall reimburse the Carrier for the total cost of providing the number of Feeder Lines used by the Carrier and modifications to the existing infrastructure and systems to tie-in the Feeder Line/s within the boundary. This reimbursement shall be a once off capital cost. The Feeder Line/s and Maintenance Valve/s shall then be the property of the Shipper/Supplier.
- 3.2.8 The Rack within the Operating Battery Limit is part of the Manifold infrastructure and shall remain the Carrier's property. Maintenance of the Rack shall be funded by the Carrier.
- 3.2.9 Maintenance of the pipes on the Rack within the boundaries shall be done by the Carrier on behalf of the Shipper under a maintenance contract to be negotiated separately.

### **3.3 Ownership, Operation and Maintenance of Feeder Lines Constructed by the Carrier Prior to the 24" Multi Product Pipeline Construction**

- 3.3.1 Unless otherwise agreed, all Feeder Lines constructed by the Carrier prior to the 24" Multi Product Pipeline construction to connect existing storage depots of the Shipper/Supplier/Consignee to the Pipeline System for either or both Intake and Delivery purposes are owned, operated and maintained by the Carrier. Such Feeder Lines for:
- a) The Intake of Product into the Pipeline System shall extend from the last valve immediately inside the Shipper's/Supplier's storage depot to the first valve immediately inside the boundaries of the Carrier's Intake Point pump station,
  - b) The Delivery of Product from the Pipeline System shall extend from the last valve immediately inside the boundaries of the Carrier's Delivery Point to the Carrier's valve immediately inside the boundaries of the Shipper's/Consignee's Delivery Point facilities.

#### **3.3.2 Facilities at Intake and Delivery Points**

- 3.3.2.1 The Carrier shall provide, own and maintain all facilities, equipment and services required to meter, sample and analyse Product Intakes and Deliveries to or from the Pipeline System.
- 3.3.2.2 Where the facilities, equipment and services required to meter, sample and analyse Product Intakes or Deliveries to or from the Pipeline System do not exist, and it is technically feasible to do so, these shall be provisioned, owned and maintained by the Carrier. The Shipper/Supplier shall bear the total cost of the infrastructure for the interconnection.
- 3.3.2.3 All other facilities and equipment reasonably required to inject Product at Intake Point or accept Delivery of Product at the Delivery Point shall be provided and

maintained at the sole cost and expense of the Shipper/Supplier at the Intake Point or the Shipper/Consignee at the Delivery Point.

3.3.2.4 Such facilities and equipment shall be provided in a manner that is acceptable to the Carrier and that shall allow the Carrier to fulfil its obligations to all Shippers in terms of all agreements concluded by the Carrier.

3.3.2.5 If the Shipper/Supplier elects to install check meters they shall be installed at the Shipper's /Supplier's side of the Feeder Line. The Carrier's meters shall be used for custody transfer purposes.

### **3.4 Changes to Existing Carrier Feeder Lines and Construction of New Carrier Feeder Lines Required for Connecting New Shipper/Supplier Facilities**

3.4.1 If the Carrier is required to reposition a Feeder Line or construct a new Feeder Line, such work shall be carried out by the Carrier at the expense of the Shipper/Supplier/Consignee if necessitated, otherwise than at the specific insistence of the Carrier, by an action of the Shipper to;

- a) Transfer its storage facilities to another property or cause storage to be provided on more than one property; - or
- b) Require connection to a new storage facility or another pipeline.

3.4.2 Construction of Feeder Lines and tie-ins to the pipeline network shall be subject to the terms specified in an Interconnection Agreement separately negotiated and concluded between the Carrier and the Shipper/Consignee.

### **3.5 Accumulator Tanks at IVW**

Accumulator tanks at IVW are operational tanks. The function of the tanks shall be to accumulate Products received from various Suppliers prior to the bulk transfer of Product in the 24 inch trunk line to JMP.

### **3.6 Accumulator Tanks at JMP**

Accumulator tanks at JMP are operational tanks. The function of the tanks shall be to accumulate Products received from various Shippers' sources prior to the bulk Transfer of Product to Delivery Points.

### **3.7 Tanks at Delivery Points**

The Shipper/Consignee shall ensure that sufficient ullage (spare capacity) is available to receive Nominated Volume directly from the pipeline as per Scheduling rules detailed in **Section 7.2**. The Carrier's tanks at Delivery Points are for the Carrier's operational purposes only.

### **3.8 Technical Design Requirements and Battery Limit Information for Feeder Lines at Durban Intake**

#### **3.8.1 Technical Design Requirements for Feeder Lines**

- 3.8.1.1 In order to reduce the risk of the Carrier acting on an incorrect Product, a manifold shall be located at the intake point so that there shall be a dedicated pipe for each of the different types of Product.
- 3.8.1.2 The preferred option is for the Supplier to follow suit and provide a dedicated Feeder Line for each type of Product.
- 3.8.1.3 The use of a single Feeder Line for two different grades of a Product shall be acceptable provided that:
- a) The Feeder Line is split to allow for two separate Feeder Lines with respective Maintenance Valves to join the manifold at the Carrier's site,
  - b) Separate valves shall be provided at the end of the Feeder Line, each designating a respective grade of Product, and the Supplier shall connect its Feeder Lines to the Carrier's Manifold accordingly,
  - c) The displacement of the Feeder Line shall be seamless, e.g. when ULP95 is received the ULP95 Supplier's intake valve shall be opened and when ULP93 is received, the ULP93 Supplier's intake valve shall be opened.
  - d) The Shipper/Supplier shall ensure that the Feeder Line/s is adequately protected through cathodic protection and the required insulation points shall be effected to eliminate negative impact on the Carrier's equipment.
  - e) The Shipper shall provide for the return of Non-Conformance Product at Intake according to the requirements herein.
  - f) Quality control shall be done as for individual Feeder Lines.
  - g) Line displacements shall be done in a seamless fashion i.e. at the end of the Slug.
- 3.8.1.4 If the Supplier intends to share a single Feeder Line for two grades of petrol and/or another single Feeder Line for two grades of diesel, then the Supplier shall be required to submit a plan agreed to by the Carrier on how Interfaces and Product downgrading shall be accomplished before the Carrier shall allow the Shipper/Supplier to inject Product. The expected volumes involved, are to be quantified.
- 3.8.1.5 Sharing a Feeder Line with another party is acceptable provided that:

- a) The Feeder Line is split at the Carrier’s site upstream of the Battery Limit and a Maintenance Valve for each of the Suppliers/ Shippers sharing the Feeder Line is provided for in the manifold,
- b) Any volume passing the respective Maintenance Valve shall be regarded as injected by the owner of the Maintenance Valve concerned and assigned accordingly,
- c) Sharing a Feeder Line would only be possible for Product with demand that is low enough as to not require simultaneous filling of the Accumulator from different sources in order for the operation to be feasible.

### 3.8.2 Battery Limit Information at Durban IVW

**Section 3 Table 1: Battery Limit information (Line Size)**

Battery Limit Interface Detection	Line Size [inch]
95 ULP maintenance valve to TPL Manifold	16
95/93 ULP maintenance valves to TPL manifold	16
ULSD maintenance valve to TPL manifold	16
ULSD/LSD maintenance valve to TPL manifold	16
Jet Fuel maintenance valve to TPL manifold	16
Off-spec product back to Shippers/Supplier	16

- 3.8.2.1 In order to ensure that the pressure rating of IVW equipment is not exceeded during Transfers, upset conditions or lock in pressures, the Suppliers shall ensure that the design plant and equipment shall include the necessary safety equipment to prevent pressure from exceeding 1920 kPa at the Battery Limit at any time.

**3.8.3. The following tables contain the battery Limit information at IVW**

**Section 3 Table 2: Battery Limit, Pressure, Flow Rates [m<sup>3</sup>/h]**

Battery Limit Interface Description	Expected Operating Conditions at Battery Limit			
	Pressure [kPag]	average flow [m <sup>3</sup> /h]	maximum flow [m <sup>3</sup> /h]	max Temp [°C]
95 ULP Feeder line to TPL manifold	508	1200	1320	35
93 ULP Feeder line to TPL manifold	508	1200	1320	35
ULSD Feeder line to TPL manifold	604	1200	1320	35
LSD Feeder line to TPL manifold	604	1200	1320	35
Jet Fuel Feeder line to TPL manifold	551	1200	1320	35

3.8.4. In order to ensure a uniform Manifold within IVW, the Maintenance Valve to be installed at the end of the Feeder Line shall be as approved by TPL.

## SECTION 4: INTAKE AND DELIVERY FLOW RATES AND PRESSURES

4.1 Intakes and Deliveries shall be at pressures, pumping rates, and temperatures specified by the Carrier.

4.2 Flow Rates and Pressures relevant to the Crude Oil Pipeline are included in **Appendix 2**.

### 4.3 Intake Flow Rates and Pressures at IVW (Durban)

4.3.1 A reasonably constant injection rate (*a reasonable constant rate is a flow variance of within 500 litres per minute (30 m<sup>3</sup>/hr) of the average flow of 1200 m<sup>3</sup>/hr i.e. a flow variance between low limit of 1170 m<sup>3</sup>/hr and upper limit of 1230 m<sup>3</sup>/hr*) during the Intake is required in order to maintain metering integrity. This requirement is detailed in **Section 17.1**.

4.3.2 Due to possible difficulty in maintaining suction pressure for pumps when tank levels are low, it is agreed that the constant flow of 1200m<sup>3</sup>/h will be relaxed to allow for an average of 1200m<sup>3</sup>/h starting off at a higher flow rate with the Carrier's control valve being fully open at the higher flow rate.

4.3.3 The operating flow rate and pressure requirements for Intake at IVW are listed in the table below. The maximum Intake pressure at IVW (Durban) is 1920 kPa.

**Section 4 Table 1: Flow Rate and Pressures for Intake**

PRODUCT	INTAKE - ALLOWABLE FLOW RATE VARIATION			MAX. INTAKE FLOW RATE [m <sup>3</sup> /hr]	INTAKE: AVERAGE PRESSURE [kPa]
	Flow Rate Lower Limit [Ave. flow less 30 m <sup>3</sup> /hr or 500 litres/min]	Average Flow Rate [m <sup>3</sup> /hr]	Flow Rate Upper Limit [Ave. flow plus 30 m <sup>3</sup> /hr or 500 litres/min]		
Petrol	1170	1200	1230	1320	508
Diesel	1170	1200	1230	1320	604
Jet	1170	1200	1230	1320	570



#### 4.4 Intake Flow Rates at Sasolburg

4.4.1 The Intake flow rate at Sasolburg is **520m<sup>3</sup>/h**.

4.4.2 The intake flow variation is limited to within 500 litres per minute (30m<sup>3</sup>/hr) of the average flow rate.

4.4.3 The maximum design Intake pressure at Sasolburg is 1900 kPa.

#### 4.5 Intake Flow Rates at Secunda

4.5.1 The maximum required Intake flow rate at Secunda is **840 m<sup>3</sup>/h**.

4.5.2 The intake flow variation is limited to within 500 litres per minute (i.e. 30m<sup>3</sup>/hr) of the average flow rate.

4.5.3 The maximum design Intake pressure at Secunda is **5000 kPa**.

#### 4.6 Flow Rates at Delivery Points

4.6.1 The depots shall be required to receive Product at the maximum flow rate indicated in the table below.

4.6.2 The design pressure requirement at Delivery Points is **1920 kPa**.

4.6.3 The flow rates below include a 10% contingency allowance.

**Section 4 Table 2: Flow Rates at Delivery Points**

DEPOT		MIN. FLOW RATE [m <sup>3</sup> /hr]	AVERAGE FLOW RATE [m <sup>3</sup> /hr]	MAX. FLOW RATE [m <sup>3</sup> /hr]
1	Klerksdorp	120	155	160
2	Waltloo	120	540	600
3	Witbank	120	420	440
4	Jameson Park	1170	1080	1230
5	Alrode	120	750	840
6	Langlaagte	120	600	840
7	Tarltou	120	510	528
8	Rustenburg	120	180	250
9	ORTIA (ex NATREF) Jet Fuel	120	150	165
10	ORTIA (ex JMP)	120	540	744
11	NATREF (Crude Oil)	120	820	836

## SECTION 5: SAFETY REQUIREMENTS

5.1 In addition to compliance with Safety Law, the Shipper/Supplier/Consignee shall ensure that the Carrier's Standard Operating Procedures (SOP) as described in **Section 9** for Product Intake and Delivery are adhered to at all times and that any deviation from the SOP is immediately communicated to the Carrier and vice versa.

5.2 The Carrier is entitled to impose or implement at its discretion any reasonable safety requirement other than those in the SOPs, for implementation at the Shipper's/Supplier's/Consignee's cost, should any circumstance require such intervention.

### 5.3 **Maximum Tank Operating Level - Emergency Shutdown at Intake Terminal (IVW)**

5.3.1 The Carrier and the Shipper/Supplier agree to the operational procedure for maximum tank operating level shutdown detailed below:

IVW SCADA system monitors tank levels and shall take the following action automatically upon reaching the respective levels:

- a) Upon reaching the 'Normal Fill' level the SCADA shall alarm the Controller on duty to take action.
- b) Upon reaching the 'high' level in the tank, the SCADA shall trigger an alarm for the controller on duty and close the control valve to reduce flow over 90 seconds. The permissive signal (a volt free relay contact in IVW PLC panel change state to close) shall also be removed.
- c) Upon reaching the 'High High' tank level, the Safety Integrity Level (SIL) system shall close all inlet valves to isolate the tank from all sources of Product. The permissive signal shall be removed. Valve travel times shall be 90 seconds for ball valves through linear movement.
- d) Shippers are to provide surge protection on their sites to cater for this ESD.

5.3.2 Testing of the operation described in 5.3 above shall be included in the Parties' safety programs.

#### 5.4 Maximum Operating Level - Emergency Shutdown At Delivery Depots

- 5.4.1 The Shipper/Consignee shall ensure its systems for tank-filling control will have sufficient independence and control to ensure timely and safe shutdown to prevent tank overflow.
- 5.4.2 Any installation of automated ESD systems on the Shipper/Consignee's site tanks impacting pipeline operation shall be agreed between Shipper/Consignee and the Carrier.
- 5.4.3 The Shipper/Consignee shall ensure that tank-operating practices, staffing level and systems provide effective safety margins to prevent a tank overflow.
- 5.4.4 In the event of an emergency the Shipper/Consignee shall close the valve isolating its tank from all sources of Product. Valve travel times shall not be shorter than 90 seconds for ball valves through linear movement.

### SECTION 6: PIPELINE NETWORK, INTAKE AND DELIVERY POINTS

- 6.1 Intake and Delivery Points on the Pipeline System are shown in the table below:
- 6.2 The availability of transport routes for specific Products shall be subject to further phases of the 24" MPP Development and Implementation.
- 6.3 Intake and Delivery Points for Crude Oil are specified in **Appendix 2**, "Requirements for Crude Oil".

**Section 6 Table 1: Intake Points and Delivery Points**

Intake Points	
1	Durban - MPP on 24" line
2	Sasolburg to Klerksdorp on 8" line
3	Sasolburg to ORTIA on 6" line
4	Sasolburg to Jameson Park on 18" line
5	Secunda to Kendal on 20" line
6	Secunda to Kendal on 12" line
7	Secunda to Jameson Park on 16" line
8	Jameson Park to Kendal 18" line
9	Jameson Park to Alrode 16" line

Delivery Points	
1	Klerksdorp
2	Waltloo
3	Witbank
4	Jameson Park
5	Alrode
6	Langlaagte
7	Tarlton
8	Rustenburg
9	ORTIA (ex NATREF) Jet Fuel
10	ORTIA (ex JMP)
11	NATREF (Crude Oil)

## SECTION 7: FORECASTS, ORDERS AND SCHEDULING

### 7.1 Forecasts

7.1.1 The formal method of submission and amendment of Orders for Product movement in the Crude Oil Pipeline is via e-mail. Exceptions to the contents of this section are included in **Appendix 2**.

7.1.2 The Shipper shall provide the Carrier with **Indicative Orders** as detailed below:

- a) Carrier's ordering Portal Interface.
- b) The Shipper shall use the Carrier's ERP Ordering Portal to enter, submit and amend Nominations.
- c) The SAP Portal can be accessed through the internet.
- d) The Carrier shall provide training in regard to use of the Portal to the employees of the Shipper as and when required.
- e) The Shipper shall ensure that its employees are well versed in the processes, concepts and terminology used in daily pipeline related business before the users are sent for Portal training.
- f) The Carrier shall only register the Shipper's employees as users to use the Portal if they have received training Transnet Pipelines Portal training, or if they are pre-existing users.
- g) The Shipper shall ensure that users use only their own User ID and password to log on to the Portal, abuse and misuse of the login credentials by the user may result in the Carrier deregistering the user from the portal.

- h) The Shipper shall ensure that users have alternative/backup access to the internet if their corporate connection or 3G connection is not available.
- i) Internet connectivity issues shall not be accepted as an excuse for late submission of Nominations.
- j) If a user can access the internet but cannot access the Portal the Carrier must be informed immediately.

7.1.3 The Shipper shall provide, on request from the Carrier, **a five year forecast** of intended volumes to be transported in the Pipeline System. The forecast data shall include Product grade, Intake Point, Delivery Point and Volume per year.

7.1.4 The Shipper/Supplier/Consignee shall ensure that the Carrier is informed in writing of relevant plans for maintenance, tests, shut-down, temporary periods of decreased/increased Intake or Deliveries and the time and duration for such events, as soon as such information is available.

7.1.5 The Carrier shall inform the Shipper/Supplier/Consignee in writing of programmes for planned maintenance, shut-downs, tests and any other activities related to the Pipeline System which could affect the Intake Point availability and/or the Delivery Point availability or otherwise influence the Shipper's Product Delivery.

## 7.2 Nomination and Scheduling

7.2.1 The Shippers/Suppliers desiring to inject Product shall furnish Nominations and receive, after the Carrier has completed Scheduling, Operations Notices for use of the Shippers Capacity Entitlement according to the process, criteria and method described below:

### 7.2.2 Nomination and Scheduling: Sequence of Events:

- a) The Shipper shall enter a forecast of Indicative Orders on the Carrier's ERP Portal.
- b) The Shipper shall enter Firm Monthly Orders by the 25th of the month before the month to which the Firm Monthly Order applies. The Shipper or the Shipper's Supplier shall review the Firm Monthly Orders to verify that they are within the volumes agreed between the Consignee, the Shipper and the Supplier. \*\*
- c) The Shipper or the Shipper's Consignee shall edit the Firm Weekly Orders on Tuesdays and shall submit the edited Firm Weekly Order before 14:00 on Tuesdays for the following week's Intakes. \*
- d) If the Consignee is not the same Party as the Shipper or Supplier, then the Consignee must submit the Nominations before 12:00 on a Tuesday. The Shipper should then check the Nominations and submit them to the Carrier before 14:00 on the Tuesday.

- e) The Carrier checks the Nomination against allocated and available capacity.
- f) The SAP Portal does not allow users to enter Nomination Volumes greater than their Capacity Entitlement. If the Shipper's total of the submitted Nomination volumes is equal to the Shipper's Capacity Entitlement the Carrier shall inform the Shipper if additional capacity is available. The Shipper shall be allowed, if the Carrier increases the Capacity Entitlement setting in the ERP Portal temporarily, to increase the Nomination Volume as agreed with the Carrier.
- g) If the Shipper's total of the submitted Nomination Volume is less than the Shipper's Capacity Entitlement, the available capacity shall be offered to other Shippers.
- h) Only Shippers shall be allowed to enter Nominations on the SAP Portal.
- i) The Carrier shall schedule the Intake to meet nominated demand. Scheduling for Intakes during the following week shall be completed by close of business on the preceding Thursday. \*
- j) After the weekly Scheduling is completed on the Thursday an Operations Notice is generated and distributed to the Shipper and other Shippers and Intake and Delivery Point operating staff. The Operations Notice contains scheduled Intakes and Deliveries information for the next 10 Days until the end of the next Cycle.
- k) The Carrier shall provide training in regard to interpreting the Operations Notice to the employees of the Shipper as and when required.
- l) The Carrier shall issue updated daily Operations Notices on Mondays, Tuesdays and Fridays after schedules have been updated.

\* *Cut off times for submission of monthly and weekly Nominations specified above are relevant for normal working weeks. The Carrier may inform the Shipper of changes to these dates for a specific Cycle if there are events, for example public holidays, that influence the normal Calendar days of a week and specific operational needs.*

\*\* *The Supplier in the SAP Portal is the Party that shall be instructed to physically inject Product i.e. back to back supply arrangements are not accommodated in the ERP Portal.*

### 7.2.3 Criteria for Acceptance of Nominations

The Carrier shall reject a Nomination if it does not meet one or more of the following criteria:

- a) The minimum order sizes as described in **Section 13**.
- b) Submission by the stipulated time: Unless otherwise specified by the Carrier, weekly Nominations agreed by Shippers and Suppliers, should be submitted before 14:00

on Tuesdays of the Cycle prior to the Cycle that the Product is required to be injected into the Pipeline System.

- c) Valid Intake Point and Delivery Point: The Intake Point and Delivery Point must be on a valid schedulable route. See **Section 6**, "Pipeline Network, Intake and Delivery Points."
- d) Within agreed Capacity Entitlement limits: Nominated Volumes should be within the agreed limits.
- e) Ability to receive Deliveries: Delivery depots should have sufficient tank capacity to receive the ordered volume in one Delivery.
- f) Clearance from the Carrier's Finance Department in terms of good account standing.

7.2.4 The scheduled time for Product Intake and Delivery shall be determined by the Carrier's transportation obligations to its Shippers and by the necessity of economical use and efficient operation of the Carrier's facilities.

7.2.5 The Carrier shall assume no liability for its inability to maintain scheduled operations or comply with the Shipper's delivery requests when caused by operational or scheduling problems, excess demand, delays and other problems encountered in pipeline operations not caused by the negligence of the Carrier.

7.2.6 Product shall be accepted for Intake during the Nominated Intake Cycle subject to the successful Scheduling of the Nomination.

7.2.7 The typical scheduled lead time between Intake and Delivery would be between 7 to 10 Calendar Days. However, there may be situations where 90% of the Order would be delivered between 7-10 days and the balance of 10% would be delivered between 14-21 Calendar Days. Physical delivery of Product will take place in a 7-10 day window. However for a Slug Delivery the reconciliation impact will be 21 days OR under exceptional circumstances as agreed between the Shipper and Carrier.

7.2.8 The Carrier shall determine the number of scheduled Deliveries per Nomination. Unless otherwise agreed the standard shall be one Delivery per Cycle.

7.2.9 The Carrier may schedule Product to be delivered any time during the Delivery Cycle and the interval between Deliveries shall not necessarily be 7 Days.

7.2.10 Scheduling of Product Intake from Accumulator tanks shall be subject to minimum order and Batch size rules as described in **Section 13**.

7.2.11 In the process of Scheduling the Carrier may optimise its operations by substituting Product at a location with Product, of the same specification, at a different location.

## **SECTION 8: RE-CONSIGNMENT AND AMENDMENTS TO ORDERS**

*(The formal method of submission and amendment of Orders for Product movement for the Crude Oil Pipeline is via e-mail.)*

8.1 If the Shipper or its Consignee requests an Amendment to a Firm Weekly Order the Carrier may levy Service Charges.

### **8.2 Process to make an Amendment to an Order**

The following steps shall be followed when an Amendment to an Order is done:

- a) The Shipper (or Consignee on behalf of the Shipper and duly authorised by the Shipper) shall request the Amendment verbally, and send an accompanying e-mail with the Amendment request details.
- b) The Carrier shall confirm verbally and by e-mail whether or not the Amendment can be accepted, and if accepted that it shall be accepted once entered into the Portal.
- c) If the Amendment involves a new line item in the SAP PORTAL for the requested Delivery Point or Consignee, the Shipper or the Shipper's Consignee must create the line item.
- d) The Shipper and Consignee shall release the Amendment request, after which the Carrier shall accept it.
- e) If the Amendments occur within the prescribed cut off time (8am-12noon – Mondays, Tuesdays and Fridays) a new Operations Notice shall be generated after the operation schedules are updated.
- f) If the Amendments occur outside the prescribed cut off times (12 midnight to 8am, Wednesdays, Thursdays, Saturdays and Sundays) the Carrier shall inform the depots of the Amendment to the Operations Notice. Any Amendments should be communicated to depots by the Party who requested the Amendment.

### **8.3 Re-consignment by the Carrier**

8.3.1 If the Shipper/Consignee does not have adequate facilities available to receive Products from the Pipeline System without delay, at the time any Slug or portion thereof arrives at a Delivery Point to which it is consigned, the Carrier may:



8.3.1.1 If the Product cannot be delivered within five hours, Re-consign said Slug or any undelivered portion thereof to a Delivery Point where facilities are available to receive it. The Carrier shall not be liable for any of the following which may occur by reason of such Re-consignment:

- a) Damage,
- b) Loss in transit,
- c) Loss in storage, or
- d) Loss of profit,
- e) Increased costs.

8.3.2 Such Re-consignment shall have the same effect as though requested by the Shipper and the Shipper shall be instructed by the Carrier to request the Amendment to Order as per the agreed procedure.

8.3.3 The Shipper shall pay transportation charges from Intake Point to actual final Delivery Points as well as any additional costs that the Carrier incurs during the Re-consignment.

#### 8.4 Requested Amendment by Shipper or Consignee

8.4.1 Provided that it is operationally feasible, the Shipper/Consignee may request the Carrier to agree to an Amendment, and the Carrier may, subject to the agreed procedure for an Amendment to the Firm Weekly Order, and subject to operating conditions of the Carrier's facilities being able to cope with the Amendment, allow the following Amendments to Firm Weekly Orders:

- a) the Shipper/Supplier and/or Ordered Volume for the Intake,
- b) the Delivery Point and/or Ordered Volume for the Delivery,
- c) The Shipper/Consignee designated to take Delivery of the Shipper's Products.

8.4.2 An Amendment to change an Intake volume shall only be considered for acceptance by the Carrier prior to the Intake of the Slug.

8.4.3 A Nomination that is submitted after the cut-off time, as described above in **Section 7.2.3.b**, regardless of whether it replaces an amended order or not, shall be regarded as an Amendment to an Order.

8.4.4 The Carrier shall use reasonable endeavours to meet a request for an Amendment to a Firm Weekly Order.

8.4.5 The Shipper/Consignee shall request the Amendment to Firm Weekly Order as explained above in **Section 8.2**

8.4.6 The Carrier will raise the Service Charges as set and or approved by NERSA for Amendments to Orders on the party initiating the Amendment to Order.

## 8.5 Amendment Due To Product Not Acceptable for Intake

8.5.1 If Product is not acceptable for Intake as explained in **Section 9.4** the Shipper shall be instructed by the Carrier to request an Amendment to Order as per agreed procedure.

## SECTION 9: OPERATIONS PROCEDURE AT INTAKE AND DELIVERY POINTS

The Carrier and the Shipper shall follow procedures for Intake and Delivery of Product as detailed hereunder:

The injection and Delivery process is standard for all locations except where specifically specified such as for Intake into the Carrier's Intake Terminal tanks.

### 9.1 Product Intake – Sequence of Events

9.1.1 The depot operations supervisor and/or controllers print out the daily Operations Notice to confirm daily deliveries and check if there were any Amendments. The Carrier shall inform the depots of any Amendments that do not appear on the Operations Notices.

9.1.2 The Carrier shall inform the depots of any unscheduled delays as per procedure agreed at depot level.

9.1.3 Two hours before the Intake:

- a) The Parties shall ensure that there is effective communication between Parties, controllers and field operators involved in the Intake.
- b) The Carrier confirms with the Supplier/Shipper details as per the Operations Notice.
- c) For Intake into the Carrier's Intake Terminal, the Carrier confirms sufficient ullage (capacity) to receive the intended volume as well as details of any Tank switch if required.
- d) The Supplier provides details of intended Tank switches during the Transfer.
- e) A representative sample shall be taken by the Supplier from the supplying tank/s. The relevant Product quality certificates for the Product in the Supplier tanks shall be made available to the Carrier. Unless otherwise agreed by the Carrier's depot manager the Supplier shall deliver the sample and the Product quality certificates to the Carrier immediately after the sample was taken and the certificate issued. The Carrier shall provide a clean container for the sample.
- f) For Intake into Accumulator tanks, the Carrier shall make available to the Shipper or the Shipper's nominated representative, a sample of the Product in the

receiving tank/s. The Shipper or his representative shall provide a clean container for the sample.

g) The Carrier shall test and confirm sample quality and compare the same against the quality certificates received, using minimum criteria as detailed in **Section 18**, "Testing and Analysis".

9.1.4 Five minutes before Intake the Carrier shall line up by opening all valves on the route except for the Supplier's intake valve in the manifold.

9.1.5 Two minutes before Intake the Carrier opens the Supplier's intake valve and confirms the route to be opened and requests the Supplier to start the Transfer.

9.1.6 For Intake into the Carrier's Intake Terminals, a permissive signal (a volt free relay contact in IVW PLC panel change state to close) shall be made available to the Supplier to allow the start-up of the pump.

9.1.7 During Intake the Carrier shall perform sampling, and shall confirm the quality of Product entering the Pipeline System as detailed in **Section 16.7** and **Section 18.4**.

9.1.8 Ten minutes before completion of the Intake the Carrier shall give a warning to the Supplier.

9.1.9 Two minutes before completion of the Intake the Carrier shall request the Supplier to take the pump offline.

9.1.10 The Supplier shall then confirm that its pump is offline.

9.1.11 The Carrier shall then close the Supplier's intake Valve and all other valves in the route.

9.1.12. The Carrier shall take a representative sample of the tank contents after Intake and confirm the quality as detailed in **Section 16.7** to the Shipper/Supplier.

## **9.2. Product Delivery - Sequence of Events**

The sequence of events during a Delivery is listed below:

9.2.1 The depot operations supervisor and/or controllers print out the daily Operations Notice to confirm daily deliveries and check if there were any Amendments. The Carrier shall inform the depots of any Amendments that do not appear on the Operations Notices.

9.2.2 The Carrier shall inform the depots of any unscheduled delays as per procedure agreed at depot level.

### 9.2.3 **One hour** before the expected time of Delivery:

- a) Parties shall ensure that there is effective communication between Parties, controllers and field operators involved in the Delivery.
- b) The Carrier shall confirm with the Shipper/Consignee that the Operations Notice is correct.
- c) The Shipper or his nominated representative/Consignee shall carry out a pre-dip and confirm sufficient ullage to receive the intended volume of Product to be delivered. The Carrier shall confirm that the Shipper's / Consignee's data matches the Product and ullage requirements.
- d) The Consignee provides details of intended Tank Switches during the Transfer. Open switching between tanks is required.
- e) Before the Product from the Feeder Line is discharged into the Consignee tank or tanks, the Consignee shall draw, in accordance with accepted ASTM D4057 sampling procedures one or more composite sample(s) of the contents of such tank(s). The Carrier shall provide a clean container for the sample.
- f) From each sample drawn by the Consignee in terms of **paragraph (e) above**, the Consignee shall decant into a clean container provided by the Carrier, an adequate quantity of such sample, and the said container shall thereafter be securely closed and labelled by the Consignee and made available to the Carrier for future testing if necessary.
- g) The Consignee may agree with the Carrier to either isolate receipt tanks or not to isolate receipt tanks during Delivery at a specific depot.
- h) If it is agreed that receipt tanks shall be isolated during Delivery, the.
  - (i) Consignee shall ensure that the receiving tanks are isolated and apply a seal, if required, for the duration of the Intake and subsequent sampling,
  - (ii) The Carrier Test and confirm sample quality using minimum criteria as detailed in **Section 16**.
  - (iii) that tanks are isolated, If it is agreed that receipt tanks shall not be isolated during Delivery the Consignee shall have no right to dispute or claim against the Carrier in relation to the quality delivered or discrepancy between the meter and the dip of the quantity delivered.

9.2.4 The Carrier shall give the Consignee a 30 minute warning prior to the commencement of Delivery.

- 9.2.5 The Carrier shall give the Consignee a further 10 minute warning prior to the commencement of Delivery.
- 9.2.6 Five minutes before Delivery, the Carrier shall line up by opening all valves in the route except for the Consignee Valve on the Feeder Line.
- 9.2.7 The Consignee Valve is opened and Delivery starts.
- 9.2.8 During Delivery the Carrier shall perform sampling, and shall confirm the quality of Product exiting the Pipeline System as detailed in **Section 16**.
- 9.2.9 If the Carrier becomes aware of a malfunction in measurement equipment the Carrier shall notify the Consignee immediately by telephone.
- 9.2.10 The Carrier shall give the Consignee a warning 10 minutes prior to completion of the Delivery.
- 9.2.11 Upon completion of the Delivery the Carrier shall close the Consignee Valve and notify the Consignee accordingly.
- 9.2.12 The Consignee shall thereupon close all other valves on the Consignee side along the route.
- 9.2.13 After delivery of Product from the Feeder Line into the Consignee tank or tanks has been completed, the Consignee shall again draw, in accordance with accepted ASTM D4057 sampling procedures, one or more composite sample(s) of the contents of such tank(s) that received Product.
- 9.2.14 From each sample drawn by the Consignee in terms of **paragraph 9.2.13 above**, the Consignee shall decant into a clean container provided by the Carrier, an adequate quantity of such sample, and the said container shall thereafter be securely closed and labelled by the Consignee and made available to the Carrier for future testing, if necessary.
- 9.2.15 The Consignee shall perform a post dip on all tanks that received Product.
- 9.2.16 Carrier shall issue the Consignee with a Product Confirmation Advice of the fuel delivered, detailing the quality of the Product Delivered, and as tested using the minimum criteria.
- 9.2.17 The Carrier shall have the right to witness if it so desires, the withdrawal of samples and/or the dipping of tanks.

### **9.3 Confirmation of Injected and Delivered Product**

The Parties agree to confirm between them, the Injected and Delivered Product as follows:

9.3.1 Once an Intake or Delivery is complete, a Meter Docket is created.

9.3.2 The Carrier shall inform the Consignee of the volume delivered upon completion of the Delivery by means of a telephone call and shall provide a copy of the document by means of a method agreed with the Consignee.

9.3.3 The Consignee shall check the volume delivered, according to its own readings, against the volume notified by the Carrier as having been delivered and shall notify the Carrier immediately if there is a variance between the Consignee's readings and the Carrier's readings.

9.3.4 The Carrier shall send an EDI message confirming Intake or Delivery to the Shipper within 3 Calendar Days of the Intake or Delivery date.

9.3.5 A Delivery package shall be delivered to the Consignee within 2 Calendar Days of the date of Delivery. The following documents appear in a Delivery package:

- a) The Delivery Meter Docket of the SCADA system
- b) Quality Confirmation Advice

9.3.6 The Shipper/Consignee may request the following records from the Carrier for specific Deliveries:

- a) Proving Records
- b) Critical Valve Log Data
- c) Hourly Quality Report
- d) Hourly Reading Report

9.3.7 All Delivery packages shall be kept at the Carrier's depot for 2 years.

### **9.4 Product Acceptable For Intake**

9.4.1 The Carrier reserves the right to reject any Products at time of Intake if:

- a) Product is not compliant to Pipeline Product Specification, SANS 1590 (as reviewed from time to time) or to any other specification issued by the Carrier
- b) Product is not available in the scheduled time window for Intake.

## 9.5 Quality Delivered

9.5.1 All Products delivered by the Carrier shall conform to mutually agreed specifications as detailed in **Section 19**.

## 9.6 Quantity Delivered

9.6.1 (The quantity delivered rules specific to the Crude Oil Pipeline are included in the Appendix containing rules specific to the Crude Oil Pipeline).

9.6.2 The Carrier shall be under no obligation to deliver the exact volumetric quantity originally injected into the Pipeline System, subject to the Product reconciliation and settlement as detailed in **Section 24**.

9.6.3 The distribution of delivered Products inclusive of Intermixture and/or reprocessed Product shall be based on the history of the working results of all preceding Deliveries to each Shipper/Consignee and shall be administered by means of a continuous reconciliation of Over and Under Deliveries to each user of the Pipeline System, with the intent that any inequitable distribution is redressed as soon as possible by adjustment of subsequent deliveries.

## SECTION 10: NON-CONFORMANCE PRODUCTS AT INTAKE AND DELIVERY POINTS

10.1 The responsibility for ensuring that Product meets specified requirements at all times at the Carrier's Battery Limit, at Intake, remains that of the Shipper/Supplier. The Carrier, as a prudent Pipeline System operator, shall assist, within limitations of monitoring equipment and procedures at Intake Points and Delivery Points, in detecting changes in physical properties of Product, to provide early warning of possible Non Conformance Product.

10.2 The Shipper/Supplier/Consignee shall provide the Carrier with contact details of the Shipper's/Supplier's/Consignee's employee/s that shall have authority to make decisions during a Non-Conformance event at Intake and Delivery Points.

10.3 The Shipper/Supplier and the Carrier shall follow procedures upon detection of Contaminated Product at Intake Point as detailed below in **Section 10.7**.

10.4 The Shipper/Consignee and the Carrier shall follow procedures upon detection of Contaminated Product at Delivery Point as detailed below in **Section 10.8**.

10.5 The Shipper that last transferred Product into an Accumulator tank, causing the contents to be off specification, shall be liable for the incident.

10.6 Liability and indemnity clauses related to Non-Conformance Products are detailed herein.

### 10.7 Sequence of Events on Detection of Non-Conformance Product at Intake Point

10.7.1 At locations where the Carrier uses instrumentation to monitor Product and detect suspected non-conforming Product, the following procedure shall be followed:

- a) The Carrier's SCADA equipment shall monitor the Product using instruments on the pipeline.
- b) If a reading is obtained outside a pre-set band width determined by the Carrier for 30 seconds or more the following action shall be taken where relevant:
- c) The Carrier shall close the Supplier's Valve over a period of 90 seconds so as not to cause a surge in pressure in the Supplier's Feeder Line.

10.7.2 At locations where manual monitoring is done the following procedure shall be followed:

- a) The Carrier shall perform a quality check 3 minutes after the line fill has been displaced to verify the accuracy of the quality certificate.
- b) The Supplier shall shut down its pumps upon notification from the Carrier that suspected non-conforming Product was detected.
- c) Suspect Product shall be indicated by one or more of the following tests:
  - i) If three consecutive Product samples exceed appearance haze rating of value '2' or deviate from expected density for longer than 3 minutes,
  - ii) If the sample tested for metals is not conforming to the required quality specification,
  - iii) If the sample tested for Flash Point, Final Boiling Point or other criteria as detailed in **Section 18.3** are not conforming to the required quality specification.

10.7.3 The incident shall be captured on the Carrier's incident management system and notification of the incident sent to the Supplier and stakeholders immediately.

10.7.4 The Carrier shall take samples from the Supplier's tanks, Feeder Line as well as the Carriers Accumulator tanks where applicable.

10.7.5 In the case of suspected non-conforming Product the Carrier and the Supplier shall perform tests at the Carrier's testing centre to verify that Product does not conform



to specification. If there is a dispute as to the Product quality tests then third-party tests as detailed in **Section 10** should take place.

10.7.6 The appropriate action to get the affected sections of the Pipeline System running again as soon as possible shall be decided upon by the Carrier in consultation with the shipper after evaluating the results of Product quality analysis. the action decided by the Carrier will be the most optimal and cost-effective solution

10.7.7 The Carrier shall be entitled to impose such conditions as the Carrier deems appropriate prior to handling any Contaminated Product on behalf of the Shipper.

### **10.8 Sequence of Events on Detection of Non-Conformance Product at Delivery Point**

10.8.1 The Carrier shall monitor and analyse Product as specified in **Section 16** during Delivery to detect possible Non-Conformance Product.

10.8.2 On detection of suspect Product the Carrier shall close the Consignee Valve and shut down the affected sections of the Pipeline System.

10.8.3 The incident shall be captured on the Carrier's incident management system and notification of the incident sent to the Shipper/Consignee and stakeholders immediately.

10.8.4 The Consignee shall allow the Carrier to obtain a sample from the Consignee's contaminated tank.

10.8.5 The Carrier shall perform required tests at the Carrier's testing centre to verify that Product in the tank does not conform to specification. If there is a dispute on the Product quality tests then third party tests as detailed in **Sections 10.13** shall be performed.

10.8.6 The best appropriate action to get the affected sections of the Pipeline System running again as soon as possible shall be decided upon receiving the results of Product quality analysis. The appropriate action decided on will be the most optimal, mutually acceptable solution for / with the appropriate Parties.

### **10.9 Operating Rules for Return of Non-Conformance Product at Durban Intake Terminal**

10.9.1 Non-Conformance Product shall be returned from the specific Accumulator to the Supplier using the Off-spec Return Line connection on the IVW Manifold. The Supplier shall take the total contents of the Carrier's Accumulator tank.

- 10.9.2 The Transfer shall be done with the booster pump rated at 1500 m<sup>3</sup>/h. The initial fill rate into the Supplier's tank or displacement of the Feeder line can be done at a lower rate if required. In this case the Supplier is required to communicate the required fill rate before the Transfer occurs.
- 10.9.3 The volume below the low liquid level in the Accumulator may not be able to be transferred using the booster pump. This volume shall need to be transferred at a reduced rate to the Diversion Tank at IVW for road loading by the Supplier.
- 10.9.4 The pre-existing contents, or Tank Bottom, of the Diversion tank could be different to the non-conforming Product transferred from the Accumulator. The Carrier shall not be liable for any further contamination of the non-conforming Product transferred into the Diversion Tank.
- 10.9.5 Flushing of the Feeder Line used for the return of Non-Conformance Product is the responsibility of the Supplier. The Supplier shall purchase Product from other Suppliers, if so required by the Carrier, for flushing back into the Supplier's tank.
- 10.9.6 Check valves in the Off-spec return line shall have lock open facilities to enable the reversal of the Feeder Line to any Supplier.
- 10.9.7 The spectacle blind in the Non-Conformance return line shall also only be swung for the duration required to return the said non-conforming Product.
- 10.9.8 The Off-spec Return Line shall be used for the return of Non-Conformance Product from an Accumulator tank/s. For hot spot volumes diverted to the Diversion Tank, the road loading facility at IVW shall be used to truck the Product away to the Supplier. The loading rate for tankers would be as per industry norms. A loading meter shall be used.
- 10.9.9 Tank dips shall be used for volume control during Transfers via the Off-spec Return Line. All volumes shall be converted to 20°C and 0 kPa gauge. Due to operational requirements of IVW, the Supplier shall arrange for the removal of any Non-Conformance Product as a matter of priority.
- 10.9.10 In order to ensure that Non-Conformance Product can be returned to the Shipper/Supplier one of the following shall be necessary:
- a) A connection or return pipeline for the return of the Non-Conformance Product shall be provided; or
  - b) Provide a written agreement that specifies that the Supplier has an understanding with another Party to accept off-spec Product on their behalf.

### **10.10 Return to Supplier and Re-Supply of Product to Replace Non-Conformance Product at Intake Terminals**

- a) Unless otherwise agreed between stakeholders for a specific incident, the Shipper/Supplier shall accept Product supplied to Intake Terminals that does not meet specified requirements, including Contaminated Product, as return transferred according to the procedure detailed in **Section 10.9 and Section 10.16**.
- b) Unless alternative agreements exist between stakeholders, the Shipper shall be responsible to re-supply the Non-Conformance Product and the Contaminated Product with Product that conforms to the required specification.
- c) The Shipper/Supplier shall pay the Carrier's cost for handling and maintenance charges associated with the return of the Non-Conformance Product. In the event that the Carrier contaminates the product, the Carrier shall bear the Shipper's/ Supplier's handling and maintenance charges.

### **10.11 Return of Non-Conformance Product Injected During Tight-line Operations**

If Non-Conformance Product is injected during Tight-line Operations, it shall be delivered at a depot nominated by the Shipper on condition that the transportation thereof is operationally feasible.

### **10.12 Proof of Source of Contamination of Product in Accumulator Tanks**

If an Accumulator is contaminated and the Shipper that last Transferred Product into the Accumulator disputes liability for the Contamination, the samples drawn in terms of the Sampling procedures shall be tested by a competent third party, to be selected by the Parties jointly. Should the Parties fail to agree on the third party the Carrier will nominate the third party. The findings of such third party shall be regarded as final and binding on the Parties.

### **10.13 Proof That Product Quality is Not Acceptable at Delivery Point**

If Product is contaminated in a Consignee Delivery tank the samples drawn in terms of the Sampling procedures shall be tested by a competent third party, to be selected by the Parties jointly. Should the Parties fail to agree on the third party, the Carrier will nominate the third party. The findings of such third party shall be regarded as final and binding on the Parties as confirmation of contaminated product.

## 10.14 Cost for Tests to Prove Non-Conformance of Injected or Delivered Product

10.14.1 The cost of the test shall be borne as follows:

- a) if the result of the test proves the contentions of one Party to have been correct and those of the other Party incorrect, by the last-mentioned Party,
- b) if the result of the test proves the contentions of both Parties to have been incorrect, by the Parties in equal shares,

10.14.2 The Parties' contentions shall be reduced to writing before such tests are undertaken and the third party appointed to conduct the tests shall, on the basis set out in paragraph 10.1.4.1 (a) and (b) above, determine how the costs shall be borne.

## 10.15 Non-Conformance Product due to Incorrect Handling of Product by the Carrier

10.15.1 The Carrier shall be responsible to arrange removal and re-supply of Non-Conformance Product if non-conformance was caused by incorrect handling of Product by the Carrier and if the Non-Conformance Product cannot be blended in tank to the required specification.

10.15.2 If Product is contaminated by the Carrier, and it is agreed between the Shipper/Supplier/Consignee and the Carrier that the most optimal solution at that point in time is to temporarily move the contaminated Product into a Shipper's/Supplier's/Consignee's tank/s, then the Shipper/Supplier/Consignee may charge the Carrier a tariff for temporary use of the Shipper's/Supplier's/Consignee's tank/s.

## 10.16 Steps to Correct Cause of Contamination and Prevent Future Contamination

- a) A plan for corrective action shall be developed and an investigating team appointed by the Carrier.
- b) The investigating team shall determine the root cause, cost, corrective and preventative action.
- c) Corrective and preventative action shall be implemented. **The closing time limit for an incident is 14 Days.** A project shall be initiated if required.
- d) The Carrier shall send a corrective action report to the Shipper.
- e) The Carrier shall do a follow up confirmation that the corrective and preventative action was successfully implemented.
- f) Penalties, for return of off-spec Product: The Shipper/Supplier may be billed for all costs related directly or indirectly to return the off-spec Product to the Supplier.

## **SECTION 11: LINE DISPLACEMENT**

- 11.1 The principle of displacing Product in Feeder Lines to allow for multiple grades of the same Product to be taken in or delivered to or from the Carrier's Pipeline System. In such cases Feeder Lines shall be connected as detailed in **Section 3.8**.
- 11.2 It is agreed between Parties that sufficient ullage shall always be allowed for in the respective tank to cater for line fill volumes required during displacement.
- 11.3 The process of displacement shall be such that minimum volumes of the higher grade Product require entering the lower grade Product tank. No lower grade Product shall be allowed to enter a higher grade tank.
- 11.4 All costs associated with downgrading of displaced Product are for the cost of the Shipper. Downgrading of displaced Product would be at the request of the Shipper.
- 11.5 Line displacement rules are not applicable to Crude Oil Products.

## **SECTION 12: BUFFER MATERIAL**

- 12.1 In the event that it is agreed that the Shipper shall be allowed to transport Product that is not conforming to Pipeline Product specifications, the Shipper shall, if requested by the Carrier, supply petroleum of a type that is satisfactory to the Carrier as Buffer Material.
- 12.2 The Shipper shall, unless otherwise agreed between the Shipper and the Carrier, accept at the designated Delivery Point for its Products, the volume of Buffer Material determined by the Carrier to be applicable to the transportation of such Products.
- 12.3 The Carrier's Tariff applying to the transportation of Products shall apply to Buffer Material transported with Products.

## **SECTION 13: MINIMUM ORDER, BATCH SIZE, DELIVERY FREQUENCY**

- 13.1 The recommended minimum quantity of any one Batch which shall be accepted at one time per destination from one Shipper is 2500m<sup>3</sup> (2.5 million litres) . The Carrier shall however consider all Orders and accept or reject them dependent on circumstances such as:
  - a) the Batch size after all Shippers' Orders are combined;
  - b) the Intermixture that shall be generated relative to the order/Batch size;

c) Scheduling and operational constraints.

13.2 Nominations shall only be scheduled for Intake into the MPP once an Accumulator tank is filled to working capacity or to a level determined by the Carrier for a specific Intake.

### 13.3 Delivery frequency:

The frequency of delivery would typically be one delivery per week. The Carrier, strictly at its own discretion, may consider more than one delivery per week dependent on Scheduling and other Pipeline Operational constraints.

## SECTION 14: MANAGEMENT OF INTERMIXTURE

14.1 The Carrier will manage i.e. receive Intermixture from existing terminal operators linked to the Pipeline System and reintroduce intermixture (separated or not) into the Pipeline System. This will be done at levels that would allow the Product delivered to a client to conform to the Product quality requirements of the Shipper at point of delivery out of the Pipeline System.

14.2 The Carrier will account for all Intermixture as part of its Pipeline System Product reconciliation and settlement process as described in **Section 24**. The Carrier should at all times know the quantity of Intermixture in the system.

14.3 For new receipt facilities (depots or terminals) constructed by a Shipper or 3rd party that is connected to the Pipeline System after 1 January 2012, the owner of the facility will be required to manage the Intermixture of all the Shippers using its facility.

14.4 The new terminal operator will provide the necessary facilities to receive such Intermixture as and when required by the Carrier.

14.5 By virtue of using the Pipeline System, each Shipper is required to take delivery of the Shipper's share of the intermixture generated during the operations of the Pipeline System.

14.6 The intermixture generation norm for the multiproduct pipeline is 0.62% for the inland market injections and 1.08% for coastal injections. These intermixture generation norms are based on international peer industries benchmarking.

14.7 The Shipper's share of the intermixture generated volume will be calculated as a percentage of the respective Shipper's six-monthly throughput in the Pipeline System multiplied by the applicable intermixture generation norm.

14.8 The Carrier makes use of two mechanisms for intermixture handling, namely:

- 14.8.1 Blending the intermixture at the Delivery Point as per **section 14.18**; and
- 14.8.2 Reprocessing the intermixture to its constituent components at the IRP and blending it as per **section 14.19** for Shippers own collection at Tarlton.
- 14.9 The Carrier allows for the Shipper to opt out from collecting their share of intermixture (reprocessed product) at Tarlton provided the Shipper nominates a Delivery Point in which the Carrier will deliver intermixture on a weekly basis.
- 14.10 Should the Shipper opt to receive delivery of intermixture, the Carrier will allocate weekly upliftment volumes as per section 14.7 and below conditions:
- The confirmation of the volume of the delivered intermixture will be based on tank dips.
  - Intermixture content or quality will vary depending on the slug movements for the period.
  - Slug numbers for intermixture delivery will be allocated by the Carrier's planning department.
  - Internal routing, flushing and displacement with regards delivery of intermixture slugs will be the responsibility of the Shipper.
  - Deliveries of intermixture will be done at normal operational flow rates.
  - The Carrier's Tariff applying to the transportation of Products shall apply for intermixture delivered to the Shipper.
- 14.11 Should the Shipper fail to collect their weekly intermixture allocation then the Carrier shall be entitled not to receive nor inject the Shipper's Products into its pipeline infrastructure. Should the intermixture remain uncollected by the Shipper within thirty days, the Carrier shall be entitled to terminate services to the Shipper, without any liability towards the Carrier, or to claim specific performance.
- 14.12 In the event the Carrier terminates service as set in Section 14.11 above, the Carrier shall be entitled to enforce its remedies in terms of the Terms and Conditions, including a claim for damages.
- 14.13 An acceptable rate for losses in the handling (management) of Intermixture in the Pipeline System will be based on an acceptable loss rate for each Product for each phase of handling in the system. Thus, where intermixture is accumulated at a depot, batched and transferred to the Tarlton facility, stored and processed at the facility, the losses for each part of such transfer, and at the receiving location, will be calculated into an aggregate Intermixture loss factor.
- 14.14 Where the Intermixture loss is greater than the Intermixture loss factor for any period, a prorated adjustment will be done for each Shipper.
- 14.15 Each Shipper will retain ownership of its share of the Intermixture and the reconciliation will reflect each Shipper's share of the Intermixture net of losses.
- 14.16 The Carrier will charge the Shipper for reprocessing of Intermixture that the Shipper is responsible for to manage.

#### 14.17 **Re-processing Intermixture at Tarlton**

14.17.1 The lowest degradable specification relevant to the Product type which Intermixture shall be reprocessed to at Tarlton is:

- a) 93ULP for petrol type Products
- b) Diesel-50ppm for diesel type Products

14.17.2 The Tarlton reprocess facility design capacity is approximately **1 million litres per day**.

14.17.3 The Carrier will allocate weekly upliftment volumes at Tarlton per Shipper as per **section 14.7** and **section 14.19**.

14.17.4 The Carrier shall levy an incentivized tariff for the volume allocated to the Shipper for upliftment at Tarlton within a week.

#### 14.18 **Blend Rates for Blending Intermixture into Product**

This shall be in accordance with SANS 1590 (as reviewed from time to time).

#### 14.19 **Blend Rates for Blending Re-processed Intermixture into Product**

This shall be in accordance with SANS 1590 (as reviewed from time to time).

#### **NOTES:**

- 1) Blending specification for reprocessed Intermixture and reprocessed Intermixture shall be periodically updated after applicable tests and analyses are done and the results accepted by the SAPIA Technical Committee.

### **SECTION 15: OPERATIONAL INVENTORY**

15.1 Operational Inventory is regarded as Product in the Pipeline System that is a prerequisite for the operation of the Pipeline System. Operational Inventory shall include:

- a) Line Fill.
- b) Tank Bottoms plus the working stock requirement of the usable tank capacity.

15.2 The system Operational Inventory for each line section will be provided by the Shipper and/or a Third Party.

15.3 The ownership of the Operational Inventory will change through time as different Shippers and/or Third Party inject Product into the Pipeline System.



- 15.4 Each Shipper will be obliged to provide Operational Inventory in relation to its use of the Pipeline System. The use will be calculated as a % of the annual throughput of the pipeline section.
- 15.5 The Carrier will reconcile the annual throughput of each Shipper and adjust the Operational Inventory required by each Shipper for the following period. A period starts on 1 January and ends on 31 December of each year.
- 15.6 The Operational Inventory adjustment will be made as a volume reconciliation between the Carrier and the applicable Shippers.
- 15.7 Where a new entrant joins the Pipeline System, it will be required to provide its share of the Operational Inventory for the period. The new entrant will have to settle its Operational Inventory requirements at the end of the period in which it joins the Pipeline System.
- 15.8 If a new entrant's line-fill requirement is greater than 5% of the line section, then the Operational Inventory adjustment will be done at the end of the quarter within which the new entrant joined the system. An Operational Inventory adjustment will always coincide with a Product reconciliation settlement.

## **SECTION 16: PRODUCT SAMPLING**

- 16.1 The Carrier shall have the right to witness, if it so desires, the withdrawal of samples by the Shipper and vice versa.
- 16.2 Samples drawn by either Party shall be retained for a minimum period of 30 Days or in case of a dispute as long as it is required to finalise the dispute.
- 16.3 Neither Party shall make any charge for samples drawn. Samples that have served their purpose shall be deemed to be the property of the holding Party.
- 16.4 The Carrier's sampling of Product shall not be interpreted to mean that the Carrier approves of the quality of Product delivered by the Shipper at Intake Points.

### **16.5 Crude Oil Sampling**

Sampling of Crude Oil shall only be done by the Carrier during Intake or Delivery.

### **16.6 Sampling Standard**

The standard for sampling shall be the **ASTM D4057** Standard Practice for Manual Sampling of Petroleum and Petroleum Products.

### **16.7 Procedure for Sampling Product at Intake**

- 16.7.1 The Supplier shall take a Representative Sample of each of Supplier's tanks which contain Product to be transferred for a forthcoming Intake, and make such samples available to the Carrier two (2) hours before Intake.
- 16.7.2 **At Intake points with interface monitoring instruments**, it is agreed between the Parties that the Carrier shall draw samples as Product is transferred to the Carrier's Accumulator tanks as follows:
- a) A 750 ml squirt sample before start-up of the Feeder Line to confirm Product quality. Where insufficient Feeder Line pressure does not allow the drawing of a sample, the sample shall be drawn at the start of the Intake.
  - b) A representative continuous drip sample taken at the Carrier's Battery Limit of all Products as they pass into the Intake Terminal.
  - c) A 750 ml squirt sample on an hourly basis for the duration of the Intake.
  - d) Prior to the start of the Intake into the Carrier's Accumulator tanks and upon completion the Carrier shall draw one or more composite Representative Samples(s) of the contents of such tank(s).
- 16.7.3 **At Intake points where manual sampling and monitoring is done**, it is agreed between the Parties that the Carrier shall draw samples of Products as they pass into the Pipeline System as follows:
- a) A representative continuous drip sample shall be taken of all Products as they pass into the Pipeline System.
  - b) A squirt sample shall be taken three minutes after line fill/Intermixture at the start of the Slug.
  - c) A squirt sample on an hourly basis for the duration of the Intake.
  - d) When drawing manual Representative Samples the Carrier shall draw off at least two litres of Product.
- 16.7.4 One third of each of the Representative Sample's quantity shall be decanted into a clean container provided by the Supplier and the container shall be clearly marked by the Carrier as to the contents, date, source Product and test results and thereafter securely closed and made available within 24 hours to the Supplier for future testing, if necessary.
- 16.7.5 The Carrier shall retain so much of the balance of the said sample(s) as it deems necessary for any future testing should the need arise.

## 16.8 Procedure for Sampling of Product at Delivery Points

At **Delivery Points**, the Parties hereby agree to observe the following procedures with regard to sampling:

### **16.8.1 The CARRIER shall draw samples as follows:**

- a) For each of the Product Slugs it delivers, such samples being drawn from a point between the Pipeline System and the Delivery meter, which point shall be closer to the said Delivery meter than the point (if any) at which Product or Intermixture is being or can be injected for the purpose of blending into the Product being sampled.
- b) A representative continuous drip sample shall be taken of all Products as they pass through the Pipeline System ("Representative Sample").
- c) A squirt sample shall be taken 3 minutes after Line Fill/Intermixture at the start of the Slug.
- d) A squirt sample on an hourly basis for the duration of the Delivery.
- e) One third of each of the Representative Sample's quantity shall be decanted into a clean container provided by the Consignee and the container shall be clearly marked by the Carrier as to the contents, date, source Product and test results, and thereafter securely closed and made available within 24 hours to the Consignee for future testing, if necessary.
- f) The Carrier shall retain so much of the balance of the said sample(s) as it deems necessary for any future testing should the need arise.

### **16.8.2 The Consignee shall draw samples as follows:**

- a) Before the Product from the Feeder Line is discharged into the Consignee tank(s), the Consignee shall draw, in accordance with accepted ASTM D4057 sampling procedures, one or more composite sample(s) of the contents of such tank(s).
- b) After Delivery of Product from the Feeder Line into the Consignee tank(s) has been completed, the Consignee shall again draw, in accordance with accepted ASTM D4057 sampling procedures, one or more composite sample(s) of the contents of such tank(s) that received the Product.
- c) From each sample drawn by the Consignee in terms of paragraph (a) and (b) above, the Consignee shall decant into a clean container provided by the Carrier, an adequate quantity of such sample, and the said container shall then be securely closed and labelled by the Consignee and made available to the Carrier for future testing in necessary.

## SECTION 17: MEASUREMENT OF VOLUMES

Shippers that do not have the ability to maintain a reasonably constant injection rate required for metering shall adhere to operational procedures detailed below:

### 17.1 Operating Rules to Maintain Flow Metering Integrity at Durban for Intake into IVW

17.1.1 A constant injection rate during the Intake is required in order to maintain metering integrity. In the case where it is not possible to maintain a constant flow rate, the Intake shall be subjected to the following control valve operation from IVW:

The control valve shall normally be in the fully open position other than for the following:

- a) during the start and end of an Intake to allow for a uniform flow increase and decrease,
- b) when gauge pressure falls below the minimum required for proving,
- c) when flow rates exceed the maximum allowed (1320m<sup>3</sup>/h) for the Transfer;
- d) during ESD (Emergency Shutdown)
- e) during the shutdown process of the Feeder Line on detecting an alarm from the Optical Interface Detector at IVW.

#### 17.1.2 In addition the control valve shall be adjusted:

- a) Automatically to maintain a flow rate within the linearity range of the meter for the upper flow rate. The metering data base shall be populated to select a meter factor for this flow which shall be used until proving can be done.
- b) Should the flow fall to below the allowed band width for the upper flow, the control valve shall operate to reduce the flow in a step change to a flow (to be determined) not to cause low suction problems on the Supplier's pump. The metering data base shall be populated to cater for this flow. The flow rate shall be controlled at this rate for the remainder of the Intake.

### 17.2 Meter Calibration

The Carrier shall:

- a) obtain all the necessary services to establish the accuracy of their meters in accordance with the standards specified by the API and any relevant South African legislation.
- b) adjust its meters according to the results obtained in terms of paragraph (17.2(a))

above.

- c) allow the Shipper all reasonable opportunity to witness and inspect tests, results and adjustments in terms of paragraph (a) and (b) above.

### 17.3 Metering at Intake and Delivery Point

- 17.3.1 All meters utilised to register the Transfer of Product (custody transfer) shall register the volume of Product as if at 20 Degrees Celsius and 0 kPag.
- 17.3.2 Products received for transportation at Intake Point or delivered at Delivery Point shall be metered by the Carrier's meters.
- 17.3.3 At all points where the Products of the Shipper are metered into or out of the Pipeline System, the Carrier shall confirm the metered quantity and furnish the local representative of the Shipper with a copy of the Meter Docket as prescribed in the procedure in **Section 9.3**. The meter readings recorded on such Meter Dockets shall be binding on both Parties for the purpose of quantity control, unless there is evidence that the meter is incorrectly calibrated or out of order, in which event the provisions of **Section 17.5** herein below shall apply.

### 17.4 Meter Failure

Should a meter fail completely or begin to register inaccurately while Product is passing through the meter the following rules shall apply:

- a) The quantity of Product passing through the meter shall, whenever practicable, be calculated by the Carrier by reference to the tank-gauge readings mentioned in paragraph 17.4. (c) below. In light of the calculation, the quantity of Product that actually passed through the meter while it was out of order shall be settled by mutual agreement of the Parties.
- b) Should the Carrier not be in position to make a calculation of the quantity of the Product passing through the meter, as envisaged in paragraph (a) above, the quantity shall be mutually agreed upon by reference to stock records kept by the Carrier and the Shipper in terms of paragraph (c) below:
- c) The Carrier and Shipper undertake that they shall:
  - i) make it an invariable practice to dip tanks before and after every Product Intake or Delivery from or to the Pipeline System and to calculate the volume so delivered according to ASTM practice;
  - ii) cause dip readings as envisaged in **(c)(i) above**, together with the calculations, to be recorded along with records of any other Product Intake or Delivery into or out of the Shipper's or the Carrier's tank(s) which may have taken place during the Intake or Delivery involved;
  - iii) allow the other Party all reasonable facilities for inspecting the said records and

witnessing the said readings.

### **17.5 Intake or Delivered Volumes Disputes**

17.5.1 The Shipper shall inform and confirm by e-mail to the Carrier, within 24 hours of the Delivery of the Product, of any intention to dispute the Carrier's reading.

17.5.2 If the Shipper does not raise a dispute within 24 hours after a copy of the Meter Docket is received then the opportunity to dispute the volume shall be forfeited.

## **SECTION 18: TESTING AND ANALYSIS**

### **18.1. Quality Assurance Standard**

The Shipper and the Carrier agree to conform to Quality Assurance Standard for laboratories as specified below:

- a) All Products testing, whether by the Carrier or the Shipper, shall be executed in terms of laboratory management system **ISO 17025**.
- b) Participation in external proficiency programs shall form part of the quality management system to validate laboratory performance in terms of accuracy and precision.

### **18.2 Certificate of Quality (CQ)**

18.2.1 A Certificate of Quality shall be provided by the Shipper to the Carrier for all Products injected into the Pipeline System.

18.2.2 The Shipper shall cause the Supplier (on behalf of Shipper) to furnish the Carrier with a quality certificate setting forth in detail the specifications of Product delivered by the Shipper for transportation, as shown below:

The information to be detailed on the Certificate of Quality shall include:

- a) Specification name, issue and any amendment number;
- b) Name and address of testing laboratory;
- c) Batch number or unique identifier;
- d) Quantity of Product in the batch;
- e) Properties tested, including specification limit, test method and result of test;
- f) Details of additives, including qualification reference and quantity of additive added;
- g) Name and position of person signing the certificate, including by means of

- electronic signature;
- h) Date of certification.

### **18.3 Quality Control - Testing Standards**

The Shipper and the Carrier agree to conform to Quality testing standards. The acceptable limits applicable for testing when a Product quality advice is issued by the Carrier, are included in the Product Specifications, SANS 1590.2017(ED.1.100).

### **18.4 The Carrier's Product Quality Advice (PQA)**

The Carrier shall issue a Product Quality Advice to the Shipper on Delivery. The information to be detailed on the Product Quality Advice shall include:

- a) Depot from where the Product was Delivered;
- b) Date and Time of Delivery;
- c) Type of Product Delivered;
- d) Slug Number for Delivered Product;
- e) Company;
- f) Total quantity of Product Delivered;
- g) Quantity of Intermixture blended into delivered Product;
- h) Composition of Intermixture (i.e. % Petrol, % Diesel, % ULP);
- i) Properties tested and results of test;
- j) Sample taken by whom;
- k) Remarks.

### **18.5 Certificate of Analysis (COA)**

18.5.1 COA's shall be produced at the IVW and JMP provided that the product is accumulated in the Accumulator tanks by the Carrier for Jet A1, inclusive of all requirements according to EI/JIG Standard 1530. COA's shall be issued by independent inspectors and/or laboratories and shall set out the results of measurement of the properties of the Product but will not necessarily contain or provide information regarding those properties identified as being required at point of manufacture or the type and amount of any additives or percentage of synthetic or hydro-processed components. For a COA of a batch to verify conformance with this standard, the CQs for all the component batches that make up the new batch shall be available. Where component batches are themselves covered by a COA, the component CQs shall also be available.

### **18.5.2 General Information to be Included on the Certificate of Analysis:**

- a) Specification name, issue and any amendment number;
- b) Name and address of testing laboratory;
- c) Batch number or unique identifier (e.g. Tank number, date and time);
- d) Quantity of fuel in the batch;
- e) Properties tested, including specification limit, test method and result of test;
- f) Additives, including qualification reference and quantity added;
- g) Name and position of authorised test certificate signatory or electronic signature.

### **18.6 Release Certificate (RC)**

18.6.1 The Shipper shall be obliged to furnish a Release Certificate when transferring aviation fuel. The RC shall confirm compliance with the relevant standard and contain at least the following information:

- a) Reference to Batch number or other unique identifier (e.g. Tank number, date and time)
- b) Test report number [last full certification (CQ or COA) or re-certification test on this batch]
- c) Date and time of release
- d) Certified Batch density
- e) Quantity of fuel (this may be added subsequently for pipeline transfers)
- f) Confirmation of full compliance with the visual appearance requirement (and conductivity if SDA is present)
- g) Grade of fuel and specification
- h) Signature of releasing authority.

18.6.2 The RC need not duplicate existing information but must be part of the consignment notes.

18.6.3 Prior to any Delivery at Oliver Tambo International Airport a valid test certificate that is less than 180 days old must be furnished by the Shipper to the Carrier. Valid test certificates shall be either:

- a) A Certificate of Quality (CQ); or
- b) A Certificate of Analysis (COA).



## 18.7 Notification of Deviations

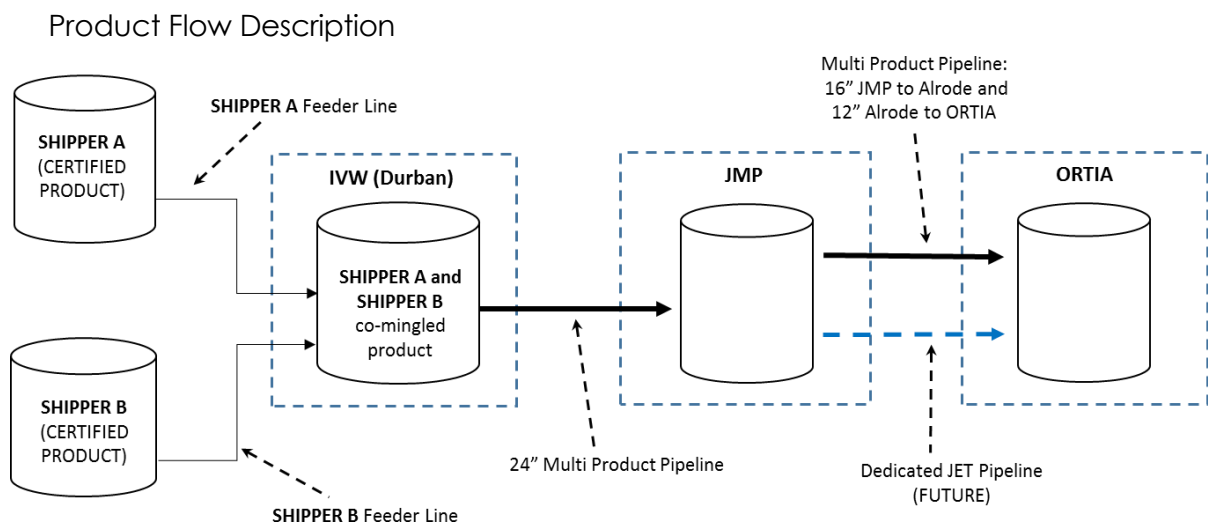
The Shipper shall notify the Carrier, and special acceptance shall be obtained in writing from the Carrier for Intake of Product if there is any deviation from the applicable specifications, standards and norms accepted by the Carrier and all Shippers, including, without limitation, notification of:

- additives that are not specified in the Pipeline Product Specification,
- blend components that are not specified in the Pipeline Product Specification,
- Crude Oil.
- Imported product from a source not previously accepted.

## 18.8 Operations for Transportation of Aviation Fuels from Durban to ORTIA in the 24" Multi Product Pipeline

The diagram below shows the flow of Jet fuel from Suppliers at Durban through the IVW and JMP terminals to ORTIA.

**Section 18 Figure 1: Jet Fuel from Durban to ORTIA**



- Product will be transferred and co-mingled from various sources into Accumulator tanks at Island View Terminal (IVW).
- Product will be injected into the 24" Multi Product Pipeline and delivered to Jameson Park (JMP) Accumulator Tanks.
- Prior to the dedicated Jet Line from JMP to Oliver Reginald Tambo Airport Fuel

Storage (ORTAFS) the Product will be injected from JMP accumulator tanks into a multi-product pipeline to ORTAFS.

- d) After the dedicated Jet Line to ORTAFS is built the Product will be injected into the dedicated Jet line to ORTAFS.

**18.9 Certification of Product shall be according to the Joint Inspection Group (JIG) Guidelines for Aviation Fuel Quality Control and Operating Procedures for Jointly Operated Supply and Distribution.**

**SECTION 19: PRODUCT QUALITY SPECIFICATIONS**

19.1 The Carrier reserves the right to refuse to accept any Product for transportation which does not meet the Carrier's Pipeline Product Specifications, SANS 1590 (as reviewed from time to time).

19.2 The Product injected into the Pipeline System is fungible. The Product injected by the Shipper/Supplier will be co-mingled with Products of like kind of other Shippers.

19.3 Only the properties within the injection and delivery specification that differ from the SANS 1590 (as reviewed from time to time). Product specifications are indicated. Where a property is not indicated, the SANS or DEF STAN 91 Product specification applies.

**19.4 Products Allowed in the Pipeline System**

Product allowed in the Pipeline System before and during transition to Clean Fuels 2 (CF2) specifications shall be determined after consideration of:

- a) Market requirements for a specific grade,
- b) 'Fungibility' of different grades produced by Suppliers,
- c) Pipeline system infrastructure capability,
- d) Technical and operational feasibility.

19.5 Up to **five** Products and their different grades as described in **section 2.1.46** and **section 2.1.47** 'Product Grades', shall be allowed in the multi-Product Pipeline System dependant on limitations as listed in paragraph **19.4 above**. A final Pipeline Product Specification shall be determined by the Carrier and shall be based on the actual behaviour of the system after transition to Clean Fuels 2. Further, the Carrier shall provide advanced written notice to the Shipper providing the Shipper a reasonable opportunity to comply with the Carrier's policy, procedures or other interventions to enable the Carrier to comply with its undertakings or commitment to low /zero carbon footprint and on climate change. Should the Shipper refuse or fail or neglect to comply with the terms set out in such written notice or conduct itself in a manner prejudicial to the compliant or effective or efficient or economical fulfilment of the Carrier's undertakings or commitments set out in this clause, the Shipper shall be

deemed to be in material breach of the terms of its agreement with the Carrier, and the relevant provisions of the Terms and Conditions or Agreement (including, without limitation, clauses 15 and 16 thereof) shall apply.

## **SECTION 20: ADDITIVES AND BLEND COMPONENTS**

### **20.1 Corrosion Inhibitors:**

For corrosion protection, the Carrier may inject corrosion inhibitors into the Product to be transported in the Pipeline System, and the Shipper or Consignee shall not be entitled to reject Delivery of Product blended with such corrosion inhibitors. Compatible corrosion inhibitors shall be used to protect the inside of the pipe.

### **20.2 Flow Enhancers:**

To facilitate the flow of Product, the Carrier may inject flow enhancers into the Product to be transported in the Pipeline System and the Shipper or Consignee shall not be entitled to reject Delivery of Product blended with such flow enhancers. The allowable limit for Drag Reducing Agents (DRA's) in the Pipeline System is 15 ppm at the Delivery Point.

### **20.3 Product Identifier**

The Carrier may inject Product identifier or product Marker into the product to be transported into the Pipeline System and the Shipper or Consignee shall not be entitled to reject Delivery of Product blended with such product identifier. Compatible product identifier shall be used to protect the integrity of the Product

The Carrier shall give the Shipper **30 calendar days'** notice before it implements a change in the flow enhancer or corrosion inhibitor used by the Carrier.

### **20.4 Additives:**

Refer to SANS 1590 (as reviewed from time to time).

### **20.5 Blend Components:**

Refer to SANS 1590 (as reviewed from time to time).

## **SECTION 21: PRODUCT CUSTODY TRANSFER**

21.1 **At Intake Point:** Custody of Product at Intake Points shall be deemed to have changed when the Product passes through the Carrier's Intake Consignee valve.

### **21.2 At Delivery Point:**

a) Custody of Product at Delivery Points shall be deemed to have changed when the Product passes through the Consignee valve.

- b) When a loss of any Product occurs while such Product is not in the custody of the Carrier, the Carrier shall not be responsible for such loss.
- c) When deterioration of Product quality occurs for Product not in the custody of the Carrier but in the Feeder Line up to the Consignee valve, which is attributable to mal-operation of equipment (or by any representative of the Carrier), the Carrier shall be responsible.
- d) Each calendar year, 90% of the total Pipeline Capacity plus the portion of the 10% capacity that was prioritised for use by new Shippers but not required by them shall be available for allocation to existing Shippers.
- e) Capacity re-allocation for existing Shippers will be reviewed every 12 weeks or if the allocation for new Shippers affects the capacity available to existing Shippers.
- f) The first allocation for existing Shippers in a calendar year will be based on market demand as detailed below in **paragraph 22.7**. All subsequent allocations during the calendar year will be based on the existing Shippers' historical **usage**.

## **SECTION 22: PIPELINE CAPACITY ALLOCATION**

22.1 Capacity Entitlement allocation shall be applicable to sections of the Pipeline System where the capacity required by all Shippers is at risk of exceeding the capacity of that section.

22.2A New Shipper is a Shipper that is allowed to transport Product in the Pipeline System in a calendar year for which the new capacity allocation is applicable ("New Shipper").

22.3 An Existing Shipper is a Shipper that transported Product in the Pipeline System, in terms of a contract with the Carrier, prior to a capacity allocation review.

22.4 The capacity allocation shall be reviewed when:

- a) New Shippers are allowed into the Pipeline System; and
- b) At intervals of 12 weeks from the date of the conclusion of the previous allocation.

22.5 The rules which will be applied by the Carrier when assessing whether to amend the pre-existing capacity allocation shall be as follows:

- a) Each calendar year, 10% of the total Pipeline capacity will be available for allocation to New Shippers.
- b) All New Shippers will share the 10% capacity available to New Shippers and the allocation calculation will be repeated for all New Shippers each time an additional New Shipper is allowed to transport Product in the Pipeline System.

- c) If a New Shipper is allowed to transport Product in the Pipeline System, and the total requested capacity of all New Shippers exceeds the 10 % capacity available to New Shippers, the capacity re-allocation for all New Shippers shall be calculated pro-rata, based on market demand (Need) as detailed in paragraph **22.7**.
- d) In the event that the pro-rata allocation for New Shippers results in an allocation of more than 5 % of total Pipeline capacity to an individual New Shipper, its capacity allocation will be restricted to 5 % of total capacity and the remaining 5 % capacity will be re-allocated to the other New Shippers.

**22.6 Capacity allocation rules for existing Shippers:**

Allocation based on capacity usage will be calculated pro-rata based on the existing Shippers' previous 12 weeks average capacity usage. A 95 % confidence level will be applied to historical usage data when the average usage is calculated.

**22.7 The Shippers shall provide the Carrier, for Capacity Entitlement allocation purposes,** proof of market demand in the areas supplied through the Pipeline System. The Shippers shall provide the Carrier, for purposes of verification that the Shippers will be able to supply Product into the Pipeline System and take Product out of the Pipeline System, with copies of Intake and Delivery contracts for at least 3 months following the date that the new Capacity Entitlement allocation would become effective.

**22.8 The notification period for a change in Pipeline Capacity Entitlement shall be 12 weeks.** If a re-allocation is done before the notice period has elapsed (e.g. when allocation is reviewed due to New Shippers), a new notification shall be issued, and the previous notification shall be overruled.

**22.9 Capacity Entitlement Allocation for New Shippers**

The minimum Capacity Entitlement allocation for a New Shipper shall be equivalent to the minimum Batch size requirements specified **Section 13**.

The steps for calculating Capacity Entitlement to New Shippers are described below:

- a) Determine the maximum Pipeline capacity that can be allocated = 10% of Pipeline capacity.
- b) Calculate the sum of all New Shippers' Needs.
- c) If the sum of all New Shippers' Need is less than the capacity available to New Shippers, allocate the full Shippers' Need, otherwise allocate the available capacity pro-rata to the Shippers' Needs = (Shipper's Need) x (Available Capacity)/(Sum of All Shippers' Need).
- d) If the pro-rata capacity allocation results in an allocation of more than 5% of total pipeline capacity to an individual New Shipper, restrict its allocation to 5% of the

total pipeline capacity and repeat the allocation steps 1 to 3 for the remaining New Shippers' Need to be allocated to the remaining capacity.

**Example 1: Example of Capacity Entitlement Allocation for New Shippers**

Pipeline section capacity: 100

New Shippers' Needs:

Company A = 20

Company B = 4

Company C = 3

Company D = 3

Company E = 1

Step 1: Pipeline capacity available for re-allocation =  $100 \times 0.1 = 10$

Step 2: New Shippers' Need to be allocated = 31

Step 3: The Need to be allocated is greater than the available capacity that can be allocated, thus do a pro-rata allocation:

Section 22, Example 1 Table 1: Capacity allocation for New Shippers

Company	Need	Calculation	New Allocation
Co A	20	$20 \times 10 / 31$	6.45
Co B	4	$4 \times 10 / 31$	1.29
Co C	3	$3 \times 10 / 31$	0.97
Co D	3	$3 \times 10 / 31$	0.97
Co E	1	$1 \times 10 / 31$	0.32
TOTAL	31		10

Step 4: Restrict Company A allocation to 5% because the pro-rata allocation calculation resulted in Company A getting more than 5 % of the total capacity allocation.

Repeating step 1 to 3 for allocation of the remaining capacity to the remaining Shipper's Needs:

Step 1 repeat. Remaining capacity available for allocation :  $10 - 5 = 5$

Step 2 repeat. Remaining New Shippers Need to be allocated: 11

Step 3 repeat. Allocation calculation.

**Section 22, Example 1 Table 2: Capacity allocation for New Shippers**

Company	Need	Calculation	New Allocation
Co B	4	4*5/11	1.82
Co C	3	3*5/11	1.36
Co D	3	3*5/11	1.36
Co E	1	1*5/11	0.45
TOTAL	11		5

**22.10 Calculation of Capacity Entitlement for existing Shippers (Based on Need)**

22.10.1 The allocation based on existing Shippers' Needs is done once a year, when first allocation is done in the calendar year. Each year all Capacity Entitlements for existing users are reset with this allocation. The subsequent allocations during the same calendar year will be adjustments based on 12 weeks historical usage.

22.10.2 The steps for calculating Capacity Entitlement for existing Shippers is described below:

- a) Determine the Pipeline capacity that can be allocated = 90 % of Pipeline capacity + unused portion of capacity prioritized for New Shippers;
- b) Verify the existing Shippers Need by reviewing contracts with Suppliers and customers for the next 12 weeks and check that the Shipper used its full allocation during the previous 12 weeks. If the full allocation was not used the need should be restricted to the actual usage for the previous 12 weeks.
- c) Do pro-rata allocation based on needs = (Shipper's Need)x(Available Capacity)/(Sum of All Shippers' Need).

Example 2: Calculation of Capacity Entitlement for existing Shippers (Based on Need)

Step 1: Pipeline capacity available for allocation: 90 (New Shippers used the full 10 % capacity available to them)

Step 2: Verified Need:  
 Company. G = 40  
 Company. H = 40  
 Company. I = 20



Step 3: Calculation:

Section 22 Example 2 Table 1: Capacity allocation for existing Shippers based on Need

Company	Current Allocation	Need	Calculation	New Allocation
Co G	35	40	40 x90/100	36
Co H	35	40	40 x90/100	36
Co I	20	20	20 x90/100	18
TOTAL	90	100		90

### 22.11 Capacity Entitlement Allocation Calculation for Existing Shippers Based on Usage

All allocations for existing Shippers subsequent to the first allocation of the calendar year based on need are based on usage. The steps for calculating Capacity Entitlement based on usage are described below:

- Determine the Pipeline capacity that can be allocated = 90 % of Pipeline capacity + unused portion of capacity prioritized for New Shippers.
- 2.5% of Nominations are discarded for the calculation to determine the average weekly usage per Shipper.
- The new allocation calculated every 12 weeks (or since the previous allocation was done due to the acceptance of New Shippers) is determined by the following formula:

$(\text{Shipper's Usage}) \times (\text{Available Capacity}) / (\text{Sum of All Shippers' Usage})$

**Example 3:** Capacity Entitlement Allocation Calculation for Existing Shippers **Based on Usage**

Step 1: Assume New Shippers used their full allocation of 10. Capacity available for allocation to existing Shippers = 90.

Step 2: Usage for previous 12 weeks:

Company. G = 37

Company. H = 34

Company I = 19

Step 3: Calculation:

**Section 22 Example 3 Table 1: Capacity allocation based on usage**

Company	Current Allocation	Need	Calculation	New Allocation
Co G	36	37	$37 \times 90/100$	37
Co H	36	34	$34 \times 90/100$	34
Co I	18	19	$19 \times 90/100$	19
TOTAL	90	90		90

**22.12** Unallocated Pipeline System Capacity shall be made available on NERSA's and the Carrier's websites.

**SECTION 23: ACCESS TO PIPELINE**

23.1 Access to the Pipeline System to New Shippers shall be allowed as prescribed by the Petroleum Pipelines Act, No. 60 of 2003 (as amended from time to time).

23.2 Information on relevant regulatory requirements is provided in this section, "Access to Pipeline".

**23.3 Relevant Regulations in the Petroleum Pipelines Act 2003 to Allow Access to Pipelines**

Access to the Pipeline System is regulated by the following sections in the Petroleum Pipelines Act of 2003.

a) Pipelines Act Section 20 (g)

Shippers of petroleum Products must have access to petroleum pipelines and a pipeline's capacity must be shared among all users and prospective users thereof in proportion to their needs and within the commercially reasonable and operational constraints of the pipeline, subject to paragraph (f) and an appropriate payment to reserve the required capacity as a condition of service;

b) Pipelines Act Section 21.

Licensees may not discriminate between customers or classes of customers regarding access, tariffs, and conditions of service except for objectively justifiable and identifiable grounds approved by the Authority.

c) Pipelines Act Section 20 (j)

Licensees must allow interconnections with the facilities of other licensees, as long as the interconnection is technically feasible and the person requesting the interconnection bears the increased costs occasioned thereby.

23.4 The business engagement process and criteria for allowing prospective users access to the pipeline shall be done according to the Carrier's process for new applications for pipeline capacity allocation that is available on the Carrier's website ([www.transnet.net](http://www.transnet.net)) Transnet Pipelines page.

## **SECTION 24: PRODUCT RECONCILIATION AND SETTLEMENT**

24.1 The Shipper agrees that the Carrier shall maintain a record of each Injection into the Pipeline System at Intake Points by a Shipper and each Delivery to a Shipper at Delivery Points, and a reconciliation account of 'short and excess' delivery of Product. The aggregate record of all Deliveries at Intake Points and at Delivery Points for the relevant period will form the basis of the reconciliation.

24.2 Reconciliation of Over or Under Deliveries between the Parties shall be made at monthly intervals.

### **The Carrier's Reconciliation and Settlement policy**

#### **24.3 The Carrier shall record the following:**

- a) The quantity of each Slug injected into the Pipeline System during each month.
- b) The quantity of each Slug Delivered out of the Pipeline System during each month. The Carrier can during any reconciliation period, based on operational requirements, correct any 'Over or Under' Deliveries by adjusting Delivery Slugs within the reconciliation period. (This could happen in circumstances where Shippers could not receive Product, Product was re-consigned or when other special supply arrangements were made).
- c) The quantity of Intermixture accumulated in the Pipeline System during the month.
- d) The quantity of re-worked Intermixture (separated material from IRP injected into the system) during the month).
- e) All stock levels in the system at the end of each month.
- f) The quantity of losses occurring during the handling of Intermixture throughout the system based on standard industry accepted loss factors for each Product.

- g) The accumulative quantity of losses occurring during handling of Product in Accumulators based on standard industry accepted loss factors which will not exceed **0.05%** for each Product.
- 24.4 At the end of each month the Pipeline System will be closed to record the volume Injected and or Delivered as at midnight of the end of the month. The Slug being Injected or Delivered will be split and the part already injected shall be recorded in the closing month and the part not yet injected shall be recorded in the new month. Only Slugs, or part thereof, Injected or Delivered in a specific month will be accounted for in that month.
- 24.5 The Carrier shall prepare an overall balance by accumulating all Injections per Product per Shipper by Slug and Deliveries per Product per Shipper by Slug and reflect the net volume position as either an owing by the Carrier to the Shipper or an owing by the Shipper to Carrier.
- 24.6 The Shipper will agree a stock holding of one week orders on a three month basis with the Carrier, and additional one week stock holding if product is moved from the coast via the 24" multiproduct pipeline. This will be deemed as the Shipper's line fill and stock holding in the TPL system.
- 24.7 Should the Carrier Deliver to the Shipper/Consignee a quantity of Product in excess of that which was agreed as stock holding less losses, then the shipper shall correct the stock holding position within a 6-week period by increasing the injections.
- 24.8 Should the Carrier Deliver to the Shipper/Consignee a quantity of Product less than injected was agreed stock holding less losses, then the Shipper shall correct the stock holding position within 6-week period by decreasing the injection.
- 24.9 The Shipper stock holding should never be in an excess or less than 15% of the agreed stock holding in Section 24.6. The Carrier will calculate and prorate for each Shipper its share of the Accumulator operational losses per Product for the period and adjust the owing with such amounts.
- 24.10 Inventory counts for a particular reconciliation period are done at the end of reconciliation period.
- 24.11 The Shipper shall have 5 working days to agree with the reconciliation sent by the Carrier. Should the Shipper not respond to such reconciliation, the Shipper shall be deemed to have accepted it.

## **SECTION 25: TRANSNET LIMITED CONDITIONS OF CREDIT**

25.1 The Transnet Conditions of Credit will apply and shall be available upon request.

## **SECTION 26: PIPELINE TARIFFS**

26.1 The Tariffs applicable to the conveyance of Products in the Pipeline System shall be those fixed from time to time by the NERSA in terms of the Petroleum Pipelines Act No. 60 of 2003.

26.2 Tariffs shall be published on the Carrier's and on NERSA's websites.

26.3 All Tariffs exclude Value Added Tax (VAT). VAT will be charged on the invoice.

## **SECTION 27: SEPARATE PIPELINE AGREEMENTS**

27.1 Separate agreements, if applicable, in association with pipeline connections or other facilities ancillary to the Carrier's Pipeline System and in accordance with this Agreement shall be required of any Shipper or Consignee before any obligation to provide transportation shall arise.

27.2 Request for connections to the system shall be made by formal Written Request to the Carrier.

## **SECTION 28: USE OF ELECTRONIC DATA INTERCHANGE**

28.1 The Carrier may utilise Electronic Data Interchange (EDI) for transmission/distribution to the Shipper of System related information. The applicable messages are the Injection (OILFIL), Delivery (OILDEL) and Invoice (OILINV) messages. The Carrier reserves the right to require the Shipper to be capable of receiving such documentation via EDI systems. However, the Carrier assumes no liabilities for errors related to delays in transmission or for interruption of services.

## SECTION 29: PRODUCT LOSSES AND GAINS

- 29.1 Calculations of the losses and gains will be made on an annual basis.
- 29.2 Any losses in excess of the values reflected in the table below will be for the account of the Carrier (i.e. reimbursed to the Shipper).
- 29.3 All Losses within the limits reflected in the table below will be borne by the Shippers' on a pro-rata basis according to each Shipper's throughput.
- 29.4 Losses greater than allowable losses will be borne by the Carrier and the Shipper will be credited for the losses greater than the allowable losses.
- 29.5 All Gains shall revert to the Shipper.

**Section 29 table 1: The table below shows the maximum monthly average losses on total Product conveyed.**

Product	Loss
All products	0.1% Shall be applied for the <b>entire pipeline network</b> .
	0.05% Shall be applied for additional Product <b>losses in an accumulation facility</b> e.g. at Jameson Park.

## APPENDIX 1 - PIPELINE CODES

Appendix 1 Table 1 - Product Codes

CODE	PRODUCT
14	Unleaded Petrol 93
06	Unleaded Petrol 95
43	Diesel 10 PPM
33	Diesel 50 PPM
08	Jet A1
76	Crude Oil

Appendix 1 Table 2 - Company Codes (Shipper, Supplier, Consignee)

CUSTOMER	CODE
Shell	H
BP	N
Chevron	C
Engen	M
TOTAL SA	T
TOTAL SA (Crude)	T
Sasol	R
Sasol (Crude)	R
Sasol 2 and 3	K
AfricOil	B
PetroSA	E
Vopak	W
Accumulator	A
Pipeline	L
TPL	P

**Appendix 1 Table 3 - Intake and Delivery Station Codes**

<b>CODE</b>	<b>COMPANY</b>
DNR	Durban
IVW	Island View Terminal
SBG	Sasolburg
ALR	Alrode
LLA	Langlaagte
KRP	Klerksdorp
APT	Airport
WAO	Waltloo
SEC	Secunda
WIR	Witbank
CBK	Coalbrook
JMP	Jameson Park
TLR	Tarlton
RTR	Rustenburg

**Appendix 1 Table 4 - Direction of Injection Codes**

<b>CODE</b>	<b>INTAKE STATION</b>	<b>DIRECTION</b>
01	IVW	IVW to all stations
02	Durban	DNR to all stations
03	Secunda	SEC to Northern market area
13	Secunda	SEC to WIR
33	Secunda	SEC to CBK via KDL
04	Coalbrook	CBK to APT (Jet A1)
05	Sasolburg	SBG to Northern market area
15	Sasolburg	SBG to Western market area
11	Fuelflow	IVW to all stations
12	Durban	IVW to all stations
06	Jameson Park	JMP to Northern market area
16	Jameson Park	JMP to Eastern market area
07	Fynnlads	FYN to CBK for Sasol
77	Fynnlads	FYN to CBK for Total



## Appendix1 Example1:

### SLUG NUMBERS - Description of a Slug number

**Example:** – If the Slug Number is **DNR - 02A647/C03-ML**

- a) **DNR - Station Code:** (DNR - 02A647/C03-ML)  
DNR is the station code which indicates the applicable depot where Intakes or Deliveries take place. (See list of station codes.)
- b) **02 - Station and direction of injection:** (DNR - **02**A647/C03-ML)  
This indicates the station at which Product is injected and the direction it is injected.
- c) **A - Consecutive letter:** (DNR - 02**A**647/C03-ML)  
This represents sequence of injection of each Product ordered for a certain Cycle. At the beginning of each Cycle this code shall revert back to A.
- d) **647 - Consecutive Cycle number:** (DNR - 02A**647**/C03-ML)  
This indicates the week for which the order was placed. Cycle 647 represents period for the week commencing 00h01 on Monday 16 February 1998 - 24h00 on Sunday 22 February 1998.
- e) **C - Shipper liable for transport payment:** (DNR - 02A647/**C**03-ML)  
This indicates the client Chevron who is liable for payment for the transport of the Product.
- f) **03 - Product code:** (DNR - 02A647/**C03**-ML)  
This indicates the type of Product being transported. (See list of Product codes).
- g) **ML - Consignee or Consignor indication:** (DNR - 02A647/C0**3-ML**)  
The first letter (M) indicates from whom or where the Product is being received and the second letter (L) indicates who or what receives the Product.

## APPENDIX 2 - REQUIREMENTS FOR CRUDE OIL

### 2.1 Pressures for Crude Oil

- a) Maximum Delivery pressure through metres is **1500 kPa**.
- b) Minimum pressure at battery limit is **150 kPa**.

### 2.2 Flow rates for Crude

- a) Maximum Allowable flow rate: **870 m<sup>3</sup>/hour**.
- b) Current average flow rate **810 m<sup>3</sup>/hour** for Light Crude and **760 m<sup>3</sup>/hour** for Heavy Crude.

### 2.3 Intake and Delivery Point for the Crude Oil Pipeline

- a) Intake Point: Transnet Pipelines 'Fynnlans' Crude Oil Intake Station.
- b) Delivery Point: NATREF Refinery, Coalbrook.

### 2.4 Testing of Crude Oil at Intake Points

#### 2.4.1 Density Testing:

- a) Density tests would be done as per ASTM D1298 for Crude.
- b) Average Crude Density currently being conveyed by pipeline is **862.5 kg/m<sup>3</sup>**.
- c) Allowable Crude Oil Densities:
  - i) Light crude: less than 870 kg/m<sup>3</sup> (API Gravity greater than 31.1<sup>o</sup> API).
  - ii) Medium crude: 870 kg/m<sup>3</sup> to 920 kg/m<sup>3</sup> (API Gravity between 22.3 °API and 31.1 °API).
  - iii) Heavy crude: 920 kg/m<sup>3</sup> to 1000kg/m<sup>3</sup> (API Gravity below 22.3 °API).

#### 2.4.2 Viscosity Testing:

- a) Due to variances in viscosity for different Crude Oil types, light to heavy Crude, the flow meters have to be re-proved.
- b) Current Average Crude Oil Kinematic Viscosity @ 20 °C is **15.858 cSt**.
- c) Maximum allowable Kinematic Viscosity @ 20 °C is **30 cSt**.

#### 2.4.3 Check for 'free' water (water visible to the naked eye)

- a) No 'free' water or water visible to the naked eye is allowed in the Crude Oil.

### 2.5 Strainers:

Strainers are required on NATCOS side to filter the Crude.  
Mesh Specification: "20 Mesh", 0.03 inch aperture – 740 micron.

### 2.6 Sour Crude Oil - limits

Sulphur Content 0.5% to 2.00 %.