PETROLEUM PRODUCT HANDLING GUIDELINES

Storage, Pipeline, Tank lorry receipt and Loading Operations-Version2
3-December 2019

The storage, receipts, loading and unloading of petroleum is a complex and potentially dangerous operations. Following basic safety practices and guidelines can help to reduce the risk of an incident. The guidelines below are not exhaustive.

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1. Introduction

The handling of product has interfaces with a large number of other activities and organizations, both within and outside of Fossil.

The handling of product is an HSE-critical activity that needs to be properly planned, monitored and controlled. The product handling operations are administered and controlled by the Terminal.

Although the planning and arrangement of replenishments is usually undertaken by the management team, the Terminal shall manage HSSE, training, asset integrity and monitor stock levels of all grades to ensure there is sufficient stock to cover estimated off takes until the replenishment date. Similarly, the terminal shall confirm that sufficient ullage is available on the replenishment date.

This document describes activities for the receipt and delivery of products from and to tank trucks and pipelines.

This document is based on accepted industry practice, e.g OGRA. A copy of the latest edition of OGRA standards shall be available at all Terminals. The local guidance shall be adhered to, provided that an equivalent level of safety of operations is assured.

Some guidance is given covering maintenance and inspection of the facility within this procedure. However, the Reliability and Integrity (R&I) plan for the site shall generally be the single point of reference for maintenance and inspection activities. R&I plan for each terminal needs to be in-placed.

2. General Workplace Safety Rules

a. Compliance FEPL HSSE Policy.
b. Report all work injuries and illnesses immediately to your Supervisor.
c. Report all Unsafe Acts or Unsafe Conditions to your Supervisor.
d. Use incident report form for reporting incident
e. No one shall physically abuse or harm any individual who works at or visits the terminal.
f. Smoking is not allowed. However, smoking is permitted only in the designated "Smoking Areas".
g. Conduct Safety Toolbox meeting prior to work start
h. Only authorized and trained Employees may repair or adjust machinery and equipment.
i. Obtain authorization before overriding or disabling safety equipment such as fire hydrant, fire engine, foam system, fire water pipeline, alarms etc.
j. Lock and Tag Out Procedures must be followed before removing any machine guards or working on powered machinery and equipment.
k. Follow Electrical Safety Rules when working with electrically powered machinery and equipment.
l. Only authorized and trained Employees may enter in confined space. All confined spaces will be posted “Confined Space - Permit required”. Entry is allowed only after permits are properly issued.
m. Only authorized and trained employees may dispense or use chemicals. It is your responsibility to know where SDS's (Safety Data Sheets) are located and that they are available for your use and review.
n. Keep work areas clean and walkways clear. Do not block emergency equipment or exits.
o. Make sure that alarm devices, extinguishers and emergency equipment are located near at a work place & known to all.
p. Mobile phone / cigarettes / Lighters / Matchboxes are not allowed. Such Items to be submitted to the security at the terminal gate.
q. Do not use plastic or steel container to empty the products.
r. Persons having their lunch box shall keep their lunch box in canteen.
s. T/L queue for decantation / any changes in plan FEPL management only authorized.
t. Proper Attire - Mandatory Personal protective equipment:

Hardhat, Safety glasses, Coverall (don’t wear woolen/silk material clothing), Safety boots, Hi visibility vest, Respirators, where applicable.

3. Basic Product Information

Gasoline, All Grades	HSD
FLASH POINT: -45 °F (-43°C) AUTOIGNITION TEMPERATURE: highly variable; > 530 °F (>280 °C) OSHA/NFPA FLAMMABILITY CLASS: 1A (flammable liquid) LOWER EXPLOSIVE LIMIT (%):1.4% UPPER EXPLOSIVE LIMIT (%):7.6%	FLASH POINT: 54 °C minimum with ASTM D - 93 AUTOIGNITION TEMPERATURE: 494 °F (257 °C) OSHA/NFPA FLAMMABILITY CLASS: 2 (COMBUSTIBLE) LOWER EXPLOSIVE LIMIT (%): 0.6 UPPER EXPLOSIVE LIMIT (%): 7.5
Extremely Flammable, Eye and Mucous Membrane irritant - Effects Central Nervous System – Harmful or Fatal if Swallowed NFPA 704 (Section 16) High fire hazard. Keep away from heat, spark, open flame, and other ignition sources EYES Moderate irritant. Contact with liquid or vapor may cause irritation. In case of contact with eyes, immediately flush with clean, low-pressure water. Seek medical attention. SKIN May cause skin irritation with prolonged or repeated contact. Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water. Obtain medical attention if irritation or redness develops. INHALATION Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness. Remove person to fresh air. If person is not breathing. Seek medical attention immediately.	Moderate fire hazard. Avoid breathing vapors or mists. May cause dizziness and drowsiness. May cause moderate eye irritation and skin irritation (rash). Long-term, repeated exposure may cause skin cancer. If ingested, do NOT induce vomiting, as this may cause chemical pneumonia (fluid in the lungs). EYES Contact with liquid or vapor may cause mild irritation. **SKIN** May cause skin irritation with prolonged or repeated contact. Practically non-toxic if absorbed following acute (single) exposure. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed. **INHALATION** Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

4. Tank Lorry Operations

4.1 Tank Lorry Entry – Main Gate

The following shall be verified before allowing vehicle access to the terminal or allowing vehicle operations in the terminal. Entry and Exit Procedure for Personnel / Drivers / Tank Lorry in the Terminal Premises.

a. The contract / agreement under which the vehicle is working.
b. Driver Verification:
    - Name
    - NIC / Company Card
    - Valid Driving Licence
c. Tank Lorry Verification:
    - Registration number
    - Loading / Unloading document
    - Safety Check List
d. Check vehicle with "Under-Vehicle Search Mirrors"
e. Don't allow additional items with tank lorry such as plastic containers, blankets, pillows etc.
f. Cigarette / Matchbox are not allowed.

Security Supervisor and Assistant Terminal Manager are responsible for compliance of the following:

- Personnel attending for duty as per respective shift with their own vehicle shall park at designated place. And those coming by public transport shall get down at terminal main entrance gate and enter in to terminal.
- Entry and exit of all contractual personnel / drivers / Tank Lorry shall be maintained by security supervisor in Security register. The following register shall be maintained at the gate:
    - Staff / visitor entry register and Security Log Book
    - Tank Lorry entry / exit and driver information
- Report all Unsafe Acts or Unsafe Conditions to your Supervisor / record in security log book.

4.2 Driver Requirements

Drivers shall be trained and demonstrate competence, terminal personnel shall verify the following requirements of Drivers:

a. Comprehend defensive driving training, product handling, conversant with loading / unloading gantry operations and emergency procedure.
b. Drivers shall meet all driving licensing and legal requirements.
c. Driver must be Familiar with Emergency response plan

4.3 Tank Lorry Parking

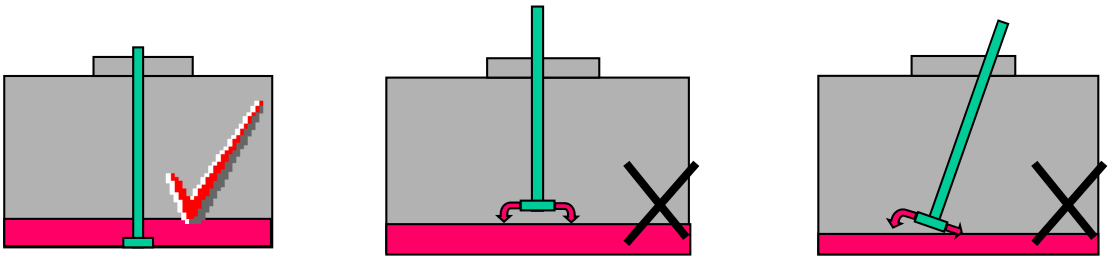
a. TL should be parked at the designated area at the terminal premises. After parking, engine should be switched off. It should be ensured that all electrical appliances (radio, lights and mobile phone etc.) are also turned off. Truck should be parked in a position that it can be quickly moved out in case of emergency.
b. During reversing of the TL, the driver should be guided by someone.
c. Keep irrelevant persons at a distance from TL parking area.

1.4 Tank Lorry Safety Check List

Refer appendix I

4.5 Top Loading

- Approved fall protections systems shall be installed and used as designed.
- During top loading, all hatch covers shall be closed and latched except the compartment being loaded.
- Top loading arm shall reach the bottom of the tank and shall be in a vertical position in order to minimize splashing, turbulence, and misting during loading. Approved equipment designs can be confirmed from your engineering focal point. See sketches below for a visual explanation of the orientation of the loading arm.



4.6 Top Loading Procedure – Tank Lorry

a. Stop delivery vehicle at the loading gantry stop line.
b. At stop line, turn off all lights, radio, and other electrical equipment
c. Set parking brakes and shut off engine.
d. When gantry bay is clear, start engine, pull forward, and spot truck for loading.
    a. Truck should be parked in a position that it can be quickly moved out in case of emergency.
e. Re-set parking brake.
f. Shut off engine.
g. PPE such as Eye protection, safety harness, cotton coverall and helmet must be worn at all times during the loading of product.
h. Under no circumstances should the driver leave the loading area unless due to an emergency.
    a. No one other than the driver is to be in the loading area except:
        i. Persons authorized by the company who have a legitimate reason to be in that area during the loading process.
        ii. No driver, while filling his tank lorry, will allow his attention to be diverted from the loading process. Examples of activities that unnecessarily divert attention from the proper focus of the loading process are:

(a) Eating or drinking (b) Reading or writing (c) Irrelevant discussion / argue

i. Check tank lorry compartment and ensure that compartment are empty and no product retain.
j. Connect scully system / coupling with tank lorry after checking above items.
k. Check decanting valve position, it should be closed before commence loading.
l. Connect the appropriate loading arms.
m. Set pre-sets for the proper litters for each compartment. Know the capacities of all compartments on the tank lorry. The pre-set counter must never be set to an amount greater that the legal/safe fill capacity of the Compartment being filled.
n. Start the appropriate product pumps.
o. At each meter:
    - Verify product, pre-set litter amount and loading arm connection to the correct compartment.
    - Verify that the pre-set meter countdown is working properly.
    - Verify there are no leaks.

p. Observe slow-flow shutdown of all meters. If slow-flow does not engage, stop flow immediately by pressing stop button. Do not bypass slow-flow. Report all fault to terminal manager or assistant terminal manager.
q. After loading is completed, disconnect and stow loading arms.
r. Verify all compartment dips of tank lorry according the dip chart of the tank lorry.
s. Look down the right and left side of the tank lorry to ensure that all loading equipment has been disconnected and stowed in its proper position.
t. Move tank lorry from the gantry to designated parking area.
    - Set parking brake
    - Shut off engine
    - Do not leave tank lorry under gantry area after loading
    - Put on seal on each compartment lid cover and valves
u. Report any spills or gantry equipment malfunctions to assistant terminal manager or terminal manager.
v. Apply dead man valve, if product flow doesn't stop by stipulated quantity.
w. Terminals shall have a documented system to assure that the ordered quantity and the net weight of the tank lorry combination do not exceed legal weight limits.
x. Equipment malfunctions must be report in operations log and also notify the relevant people via e-mail.
y. Driver or OMC representative to collect bill of lading/invoice and all other necessary documents.
z. Ensure that the product identification labels and the emergency response guide book are available in the truck cab.
aa. Driver and OMC representative must become familiar with each loading facility's rules and regulations.

4.7 Quantity and Quality Checks – After Loading

Quantity and Quality checks should be carried out after loading operations.

4.8 Static Electricity – Precautions during Tank Lorry Operations

Vehicles to be loaded shall wait at a safe distance from the loading gantry with engines and other equipment off, the driver in the vehicle is ready to enter the next available gantry when it becomes available and in accordance with local documented procedures. These procedures shall include items such as:

Proper vehicle positioning at the gantry, such that the loading arms can reach all compartments to eliminate or minimize the moving of the vehicle during the loading process (vehicle reversing is prohibited).

- Effective measures shall be taken to ensure that the correct product and correct volume is being loaded into each compartment, for example, label each compartment with suitable product markers.
- Where there is a change of grade from previous product loaded the requirements of the Switch Loading Procedures (See 10) should be followed.
- Ensure grade plates (or product tags) are adjusted to correct name/color coding before starting the loading.
- Products and volumes to be loading have been verified.
- Proper sequence for preparing to load / connect the various loading components or equipment:
    - Vehicle lockout system or anti drive system to prevent movement of the vehicle.
    - Vehicle brake interlocks.
    - Bonding and or overfill connection.
    - Loading arm(s).
- Compartments to be loaded are empty.

4.9 Switch Loading

Switch loading introduces additional risks because of the volatility and conductivity difference between various products. Product quality considerations shall also be considered. Typically, for products delivered to service stations (gasolines, diesels), the compartment shall be drained dry prior to refilling; compartment flushing, washing etc. is not required. Other product groups are typically loaded into vehicle dedicated to that service (black oils, etc.). As such, compartments drained dry between loads is adequate; compartment flushing, washing etc. is not required.

4.10 Additive Addition

The manual addition of additives during vehicle loading operations is a non-standard and contributes to errors and increases risks. Should the business require this activity to occur, consultation with business partners (such as Supply, Operations, Engineering, HSSE, etc.) shall occur prior to committing to perform the task to ensure it can be done safely and properly.

A derogation from the General Manager shall be obtained prior to performing this activity.

4.11 Documentation

Vehicle drivers shall have the necessary documentation as locally required. Terminals shall include in their local operating procedures for all paperwork and documentation requirements. This includes the following:

- Document as per the local legislation requirements.
- Bill of Lading (BL) as per agreed procedures e.g OMC contract document.
- Hazardous materials labels/documents such as MSDS and other labeling in place
- Other documents, such as, delivery notes, product quality documents

5. Vehicle Receipt Operations

a. Dip chart will be checked for originality & contents on invoice will be verified with the dip chart.

b. Before decanting overall tanker body to be checked for tempering, dents, hidden valves or any discrepancy in the tank lorry.

c. Physical seals numbers of tank lorry must match with documented seals numbers. - Seals must be properly intact, loose / broken / tempered seal not acceptable.

d. Physical seals numbers of tank lorry must match with documented seals numbers. - Seals must be properly intact, loose / broken / tempered seal not acceptable.

e. A time of 20-30 minutes is given to the TLs for the product settlement.

f. During dips checking tank lorry must be placed at zero leveled bay. Before taking dips, free water will be checked in the T/L. - If water is found in T/L then dipping of the T/L will be carried out after complete drainage of water.

g. Before decanting a tank lorry, it must always be checked for free water from decanting valves. Water in product can be checked with the help of water finding paste.

h. If free water is present it will come out first and can be seen easily, continue draining the water until free water diminishes and clear product appears.

i. If the quantity is found less than the actual dispatched quantity as per ASTM table then same has been added in host company stock.

j. After decantation, tank lorry must be fully decanted with no oil left in it.

k. The T/L is then shunted off in various ways to extract the product, which could not be sucked by the pipes i.e. raising the TL on the top of the ramp or by applying the brakes to the TL back and forth and placing the bucket at the decanting valve of the TL to collect the product

l. It is the responsibility of FEPL operation team & shift supervisor to ensure that the oil is completely drained out from the tank lorry.

m. After decantation empty tank lorry should be fully checked for any hidden compartment or any other manipulation inside the chamber of tank lorry. - The Executive Operations / Supervisor finally peep inside the tank from the top main hole to ensure no remaining of the product quantity in the T/L.

n. Shortage of product if any or receiving acknowledgment copy then handed over to the driver and the T/L exits from the depot after security guard physical check.

o. During dips checking, total dips and collar must be checked and should be according to the dip chart.

p. A comparison sheet of filling Vs decanting (dips, temp. gravity diff. & shortage calculation) will be maintained on daily, fortnightly & monthly basis.

q. All relevant documents (PTD, Batch test report, Photocopy of dip chart) with reporting T/Ls for decantation will be regularly filed & maintained.

r. Terminals shall ensure that all Terminal equipment is available for use upon the arrival of the vehicle. This includes tanks and available ullage for the receipt, pumps, lines, emergency equipment, etc.

s. As soon as transfer commences, Terminal personnel shall check the integrity of the transfer system and confirm that the correct product is being received only to the intended tank(s).

t. Once the receipt has been completed, all systems shall be returned to a secure, non-operating status including proper draining and stowage of hoses and other requirement as defined in the local operating procedures.

u. Check each compartment visually when unloading is complete to verify removal of all products.

v. A Vehicle Pre-Receipt Checklist shall be completed prior to each receipt. This checklist helps ensure all necessary steps prior to the vehicle receipt have been taken. Refer Appendix II.

6. Loading / Unloading Tank Lorry – General Rules & Safety Precautions

a. Turn off all non-essential vehicle equipment and systems.
b. Ensure all top hatches, dip and fill pipe caps are closed before starting the process.
c. Verify Tank lorry shipment documents including legal requirements as per the NHA and OGRA standards.
d. Walk around Inspections: A gantry operator must conduct a walk around inspection. Must visually check for any unusual odors, noise, or physically defective equipment, such as broken battery cover, tires, leaks, smoke, etc.
e. Before loading each load, verify that every compartment is empty. This is crucial when loading Kerosene. Do not load Kerosene into a compartment that previously contained gasoline. Load Kerosene only after a distillate. Draining the compartment of all residual products before loading.
f. Vehicle loading sequence and weight distribution.
g. Driver must be available during the entire loading sequence.
h. The gantry operator / driver shall be prepared to push the emergency stop button in case of a meter over-run, equipment or other failure.
i. Disconnection of the loading equipment is in the reverse order of the connection sequence.
j. Post loading and pre-departure checks including vehicle and all loading equipment is properly secured.
k. Any draining into a container shall have the proper bonding cable.
l. Drained product shall not be emptied into the oil spill containment system (interceptors, strip drains, etc.).
m. Don't Load / Unload the vehicles if:
    - The engine is running.
    - The parking brakes are not applied.
    - Non-essential electrics are not switched off.
    - Other unsafe conditions exist.
    - Vehicle repairing while loading/decanting at gantry.
    - Vehicle refueled while loading or any loading equipment is connected.
n. While compartment draining should not be a routine activity at the gantry, the Terminal shall have systems / procedures available for the unexpected occurrence.

o. The engine should not be restarted until all caps, valves, covers, etc. on the vehicle have been closed and securely fastened, loading equipment has been properly stowed and the vehicle is ready to depart from the gantry area.
p. Compartment security sealing - Local written procedures shall be established if this operations is required by local regulation, customer requirements or other reasons. The safety of the sealing activity, particularly exposure to falls, shall be evaluated in the Risk Assessment in Terminal HEMP.
q. Access to tanker tops shall be minimized and undertaken only when essential. When required, appropriate fall protection shall be incorporated into the site-specific procedures.
r. Loading shall occur in one compartment at a time if one person is loading. Loading can occur in two compartments at a time if two persons are used for loading.
s. Each loading arm shall have a dead man handle and the operator shall be close to an emergency stop button to stop loading in case of an emergency situation. Dead man controls shall be held open by the loader and shall not be locked or propped open.
t. Loaders shall position themselves upwind, or across wind, to avoid inhaling vapours during loading. (Equipment upgrades to minimize vapour inhalation are being installed at affected facilities.)
u. Fire Extinguishers of the tank lorry to be placed near decantation area.
v. Never leave vehicle valves open after offloading. Vapors would spread around the vehicle, making the area highly dangerous
w. Use a non-sparking bucket/drum to collect any spillage and transfer into the decanting header funnel.
x. Terminal loading / decanting equipment shall be set, operated and maintained in accordance with engineering design standards.
y. Precautions against electrostatic ignitions when loading / unloading vehicles with bulk fuels.
z. Stand against the wind to avoid inhaling fumes. Be mindful of wind direction.
aa. Operator / Driver be focused on product loading / unloading.
bb. Loading / unloading is not allowed during a heavy storm or rain.
cc. Keep irrelevant persons at a distance from decanting / loading area.
dd. Operator / Supervisor Understanding of system designs and flow rates.
ee. The transfer shall begin at a slow pumping rate to allow for system integrity checks and to ensure that the line has been cleared of any contaminants from the previous transfer and to ensure that all air in the line has been displaced.

Note: If there is a dispute between the drivers on final dip the fossil staff and driver will contact I/M.

7. Pump house & metering shed Operations

I. Ensure that delivery and suction valves are in open position of the relevant pump (during receipt or delivery).
II. Ensure that non-operational valves are closed in metering shed and pump house.
III. Monitoring of Pipelines pressure

8. Control Room Supervisor

Control Room Supervisor to manage the following:

- Daily Stock Inventory & Storage tank loss / gain
- Meter Operations
- Coordination with gantry and pump house staff
- Prepare Daily Meter Report of Delivery
  - Initial Reading of Meters
  - Final Reading of Meters
  - Delivery Quantity
  - Reconciliation of "Daily Meter Report of Delivery" with "tank stock inventory"
- Maintain Meter Register
  - Tank Lorry Number
  - Meter No.
  - Tank Lorry Capacity
  - Delivered Quantity
- The Bill of Lading / Invoice number
- Aware with operational tank numbers & product
- Hourly gross reconciliation receipt vs volumes received in the Terminal tank(s).
- If the receipt requires an interface cut, the timing and volume of the interface shall be recorded.
- All information must be recorded in chronological order.
- Response to High Level Alarm, High…High Level Alarm

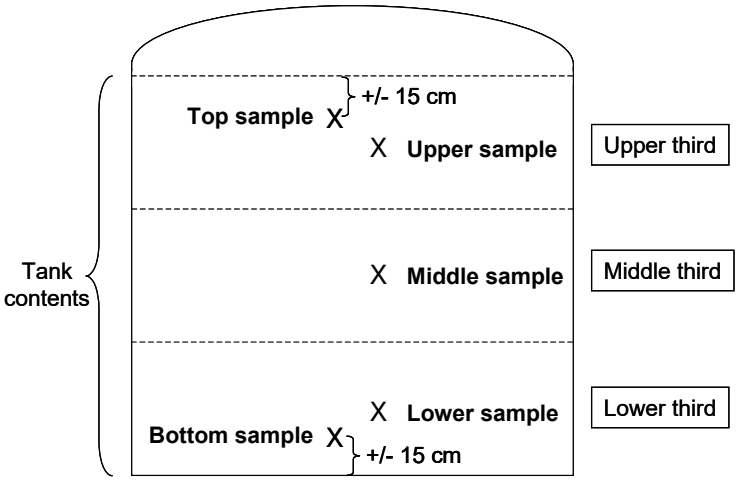
Notes:

- *If a roof is on its legs, the Terminal operator must be given sufficient notice of this fact to allow for any changes in normal operations.*

- *Vehicle receipt operations shall be organized and scheduled in such a way that waiting and discharge times at the terminal are minimized.*

9. Product Sampling

Top sample:	Spot sample taken from about 15 cm (6 inch) below the top surface of the liquid.
Upper sample:	Spot sample taken from the middle of the upper one-third of the tank contents.
Middle sample:	Spot sample taken from the middle of the middle one-third of the tank contents.
Lower sample:	Spot sample taken from the middle of the lower one-third of the tank contents.
Bottom sample:	Spot sample taken from about 15 cm (6 inch) above the bottom of the tank.
Composite sample:	Blend of spot samples, mixed in proportion to the volumes of material from which the spot samples were taken.



Note: If the receipt volume is to be measured via meters, the meter tickets shall be recorded and made a part of the receipt documentation.

10. Pipeline Operations

The Terminal shall ensure that all pipeline transfer related operating limits are documented and maintained. Examples include the pipeline's and Terminal's maximum flow rates and pressures, valve closure timing, tank minimum and maximum operating levels, tank high and high-high level alarm settings, vapor control system, etc.

Pipeline transfer related equipment operates within certain limits and includes protective devices to minimize hazards. The Terminal shall know these limits and carry out equipment checks to ensure protective devices are working properly. Refer to the Terminal R&I Plan.

Shutting down during pipeline operations can cause rapid pressure surges and can cause severe damage to systems and equipment. As such, emergency shutdown operations between the pipeline company (e.g PARCO) and the Terminal (e.g MHK, Ghatti) shall be discussed, agreed upon, and documented.

Effective communication shall be established and maintained between the Terminal, control room and other transfer related locations throughout the transfer.

If the Terminal tankage and configuration allows, the tank identified for the pipeline receipt shall be isolated from other movements. If the tank cannot be isolated, the Terminal shall have a written procedure in place and agreed to by Supply on the basis of a risk-based assessment of the entire supply chain with respect to product quality.

The Terminal shall develop and implement a shift handover / communications log to ensure all-important information is properly documented. As part of the shift handover, personnel leaving and arriving on shift each share responsibility to ensure all activities are properly communicated and understood. Examples include the pipeline schedules, the status of valves, lines and tanks, critical operations such as product receipts, tank alignments and maintenance tasks and all other activities that could impact pipeline and Terminal operations.

Any water bottoms or roof water shall be drained if necessary prior to any pre receipt gauging activities.

If readings are taken by personnel other than Terminal staff (e.g. Customs official or independent inspector), they shall be witnessed by Terminal personnel. Tank shall be operated such that free water is removed periodically in accordance with local

requirements. However, the maximum volume in any tank shall not impact product quality and customer service levels.

The Terminal shall confirm readiness to commence the receipt after the Pre Pipeline Receipt Activities are completed.

The high and high-high level alarms are for emergency notification only and shall not be used as an operational control device.

The Terminal shall complete the hourly volume checks during the entire receipt period, and documented on the Pipeline Receipt Log to ensure product transfer agree with received volumes.

Automatic Tank Gauging (ATG) systems have the capability to set reminder trip levels and volume change trips. Their use is encouraged to reduce the incidence of incorrect product transfers or undetected product movements. However, these capabilities shall be considered backup systems and not to be relied upon to manage the receipt operations.

After the receipt is complete, the Terminal shall return all Terminal and pipeline valves and other equipment related to the shipping operations to a non-product transfer position.

Tanks shall be allowed to settle for at least 30 minutes after completion of receipt to allow static to dissipate and free water and solid contaminants to settle.

A Pipeline Receipt Checklist (Appendix III) shall be completed prior to each receipt. This checklist helps ensure all necessary steps prior to the pipeline receipt have been taken.

10.1 Pipeline Receipt Log

The Terminal shall maintain a record of pipeline activities (Pipeline Receipt Log) such as a bound logbook or pipeline receipt form. The information shall be recorded for each receipt and shall include the information as mentioned in appendix IV. This information shall be detailed for all tanks used for the receipt including interface tanks.

When completed, the form shall document a chronological record of the receipt and other relevant information to enable later reconstruction of the entire receipt.

10.2 Pipeline Receipt Operations (Receipt through pipeline)

- Host companies will provide the breakup of quantities against monthly product movement to Manager Operations.
- Manager (Ops) coordinate with respective in charges for product receipt.
- Products will be taken as planned. In case of any change from either end, the host company will be informed accordingly for desired action.
- Against communicated schedule for product receipt, following procedures will be used for receiving parcel through pipeline:
- Dips/Temp./ Density will be taken at least three times at either end to have best corrected figure leading to most accurate calculated volume.
- Ensure that adjoining lines from PARCO/supplying point to other OMCs should be properly closed / sealed / completely isolated during pumping to FEPL.
- Verify pipeline is filled with product.
- Dips/Temp./ Gravity will be taken at least three times at either end to have best corrected figure leading to most accurate calculated volume.
- Joint Dip statement Performa must be prepared for every receipt & properly filled with accuracy & keep update record as well.
- Final Oil / water dip temperature & observed density gravity of PARCO / supplying point is taken six hours after completion of parcel receipt. Figures to be noted on joint dipping Performa.
- Product tank initial dip & water dip is taken for ullage calculation of tank in which the parcel receipt is to be made.
- Ullage is calculated by Shift I/C with prior consultation of Terminal I/M, once finalized, tank is then closed for parcel receipt.
- Target for receipt quantity in respective tank will be set be shift I/C in consultation of terminal I/M, who will then communicate to PARCO/ supplying point. If parcel quantity to be received partially in different tanks then the request will be submitted in breakup according to ullage
- Receipt parcel lineup connection will be done by FEPL staff to respective receipt tank. Shift I/C & shift supervisor to ensure proper parcel receipt lineup in order.

- Shift I/C / Executive Officer terminal checks product line up from retriever to respective tank and ensure that right valves are opened only.
- Shift I/C / Executive Officer terminal will also make it sure that valves in lines for rest of the tanks other than specified tank for parcel receipt are properly closed.
- Shift I/C / shift supervisor to check line from one end to retriever end for one time to respective receipt tank thoroughly after every two hours for any leakage / spillage during pumping.
- Following the initial slow pumping period, flow rates may be gradually increased to the maximum rate, at which time the integrity of systems shall be re-confirmed.
- If a roof is on its legs, the pipeline operator must be given sufficient notice of this fact to allow for any changes in normal operations.
- After 40 minutes from parcel start, product sample is checked at retriever end from sampling point for quality purpose by shift I/C & shift supervisor.
- During this check, product color, temp & gravity will be observed as per standards specifications.
- During pumping, Shift I/C/ officer operations/ shift supervisor to carry out sample checking of parcels with intervals for getting assurance of receiving of right product with right quality.
- Product tank initial dip & water dip is taken for ullage calculation of tank in which the parcel receipt is to be made.
- Ullage is calculated by Shift I/C with prior consultation of Terminal I/M, once finalized, tank is then closed for parcel receipt.
- Shift Supervisor upon the completion of pumping operations, closes all respective valves from retrieving end to respective receipt tank.
- Product quantity received in the tank is calculated from initial & final dip working and compared with PARCO/ supplying pumping station to ascertain transit gain / loss on the receipted quantity in the tank.
- In case of product parcel quantity dispute, PARCO/ supplying end is informed for investigation & corrective action.
- After giving due settling time (six hours), the tank in which receipt is taken becomes ready for dispatch.

- Product tank initial dip & water dip is taken for ullage calculation of tank in which the parcel receipt is to be made.
- Ullage is calculated by Shift I/C with prior consultation of Terminal I/M, once finalized, tank is then closed for parcel receipt.
- Shift Supervisor upon the completion of pumping operations, closes all respective valves from retrieving end to respective receipt tank.

11. Storage Procedure - Routine Checks

To ensure that product quality is satisfactory maintained while in storage, the following procedures must be applied?

a. Visual check shall be carried out after receipts and setting until tank is water free, water check may then be reduced to weekly if past experience shows more frequent checking is unnecessary. Water checks must be made prior to release and daily when deliveries continue.
b. The correct operation of floating screen shall be ensured for PMG storage tanks.
c. Storage tank contents must be verified / test physically daily i.e (Color, temp. density, odor etc.).
d. Static stock shall be sampled after six months for periodic test (average sample) and thereafter, every three months.
e. If the results of test (c) and (d) are unsatisfactory, the tanks must be isolated and an Average Sample taken from each tank for full Specification Test which must prove satisfactory before the stock can be released.

12. Quality Control and Quantity

The Terminal shall sample product during the transfer in accordance with the QA procedure.

Any abnormal situation encountered during the receipt, e.g. haze, colour, density or other unusual or unexpected difference, must be investigated, usually including the shipper. If a noted difference lasting for more than a few minutes does occur then the pipeline company shall be asked to stop pumping, divert flow or take other corrective actions.

12.1 Before Receipt

Fossil quality and quantity measurement requirements to be fully followed. Terminals shall confirm that the receipt procedure & legal requirements are met and documented. All actions with respect to PQ shall be documented and approved by the GM Operations.

Ensure that information on stock control (including gauging, temperature, density criteria) are aligned as per the Fossil requirements.

Receiving tanks shall be isolated. Prior approval from GM Operations is required for Pump and Run Operations.

If the receipt volume is to be measured via meters, the meter tickets shall be recorded and made a part of the receipt documentation. Or Dip certificate should be prepared for measurement.

12.2 After Receipt

Fossil requirements shall be followed for quality and quantity measurement.
Terminals shall confirm that receipt procedure & legal requirements are met and documented. All actions with respect to PQ shall be documented and approved.

Ensure that information on stock control (including gauging, temperature, and density criteria) are aligned as per the Fossil requirements.

13. Instructions for Additives receipt

Additives are generally received either in bulk or in drums. If additives are received by drum or other portable containers, Terminals shall have a local operating procedure which covers specifics of additive receipt and handling specific to the drum / portable containers being used.

The procedures shall include:

- Labeling requirements.
- Documentation and other tracking requirements.
- Verification of the proper additives being received.
- Storage requirements specific to the products (i.e. those with exothermic properties).
- Proper product rotation.

14. Documentation

For each receipt, the Terminal shall file a copy of the following documents and provide Supply copies of this information as required locally:

- Pipeline Receipt Checklist.
- The Pipeline Receipt Log.
- Prepare Initial & Final Joint Dip Certificate
- All quality test results and certificates.
- Record of other movements into or out of the tank during the receipt.
- Pipeline or Terminal meter tickets. Where applicable.
- Any other relevant information.
- Dip Book
- Daily Inventory Report & Gain / Loss working
- Tank Lorry Check List

15. Emergency Response

The Terminal shall have an Emergency Response Plan that includes guidance on how to manage all predicted emergencies that may occur or impact receipt and storage operations. Scenarios include spills, fires, personal injuries, weather, equipment failure etc.

Appendix I

Tank Lorry Safety Checklist

1. **Tank Lorry Information**

TL Registration No.:		**Inspection Date:**	
Contractor		Last inspection Date:	
Name Driver – 1		Name Driver – 2	

Ref.	Description of Checks	Status (√ / X)
2. Tank Lorry Documents		
2.1	TL Fitness Certificate	
2.2	Route Permits	
2.3	Registration Book	
2.4	Explosive License	
2.5	Calibration	
3. Driver -1		
3.1	Driver – (Valid Driving License) - Does the driver have valid driving license for the vehicle type?	
3.2	Company Card & NIC	
4. Prime-Mover		
4.1	Cabin Housekeeping	
4.2	Wiring – Check for loose / uncover wiring	
4.3	Fire Extinguisher (Inside the cabin)	
4.4	Seat-Belt	
4.5	Horn, Wiper, Windscreen, Side View Mirrors	
4.6	Indicator, Brake, Reverse Buzzer & Fog lights	
4.7	Flashlight Intrinsically Safe	
4.8	First Aid Kit & Spill Recovery kit	
4.9	Spare fuses (as required by law)	
4.10	Personal Protective Equipment for driver	
4.11	Master Switch / Electrical isolating switch	
4.12	Spark Arrester on exhaust	
4.13	Battery Cover	

Tank Lorry Checked by		
Name		
Job Title		
Signature, Date & Terminal Name		
3. Driver -2		
3.1	Driver – (Valid Driving License) - Does the driver have valid driving license for the vehicle type?	
3.2	Company Card & NIC	
5. Trailer		
5.1	Sign of Leakage / seepage (Valves & Tanks)	
5.2	Tyre Condition	
5.3	Earth Strip	
5.4	Have the correct dangerous goods stickers been used	
5.5	Are the Dangerous Goods Declarations available in all required languages?	
5.6	Safety / Demarcation signs, Dangers / Reflective Triangle	
5.7	Wheel chocks	
5.8	Fire Extinguisher (attached with trailer)	
Comments:		

Appendix II

Tank Lorry Pre-Receipt Checklist

The checklist shall include the following, as a minimum. Terminals shall ensure that all resources / equipment are available for use upon the arrival of the vehicle. This includes:

Tank Lorry No.:_____ Driver Name:_____

Tank Lorry Check by:_____ Date & Time:_____

S.No.	Description of item to be checked	Status (Yes / No / NA
	Verify Tank Lorry documents i.e Invoice, Product, Tank Lorry Dip Chart	
	Ensure that seals are intact.	
	Emergency equipment are accessible, such as: • First Aid Box • Fire Extinguisher • Emergency Eye Wash / shower • Oil spill recovery kit • Tool box	
	Check Tank Lorry Product Quantity & Quality: • Dipping of all compartments of tank lorry • Check presence of water in tank lorry compartments • Temperature, Density • Product Color • Test Report	
	Confirm that high and high-high level alarms on the receiving tanks(s) and ESD are operating.	

S.No.	Description of item to be checked	Status (Yes / No / NA
	Confirm grades and quantities expected	
	Allocate / assign unloading bay number	
	Receiving Tank: Tank and pump number to be used. (Confirm terminal storage tank level or ullage, temperature, density and water level readings of receiving tank)	
	Confirm that all valves are lined up (opening valves for receipt and verifying that all other valves are closed) – If required, refer process & instrument diagram.	
	Confirm by calculations that the tank(s) can safely receive the product.	

Appendix III

Pipeline Receipt Checklist

S.No.	Description of activities	Checking Status Yes / No /NA
1	Confirm grades and quantities expected.	
2	Confirm tank and pipelines to be used.	
3	Confirm tank level, temperature and water level readings have been taken.	
4	Confirm that all valves are lined up (opening valves for receipt and verifying that all other valves are closed).	
5	Confirm that all gauging equipment to be used is operating.	
6	Confirm that high and high-high level alarms on the receiving tanks(s) are operating.	
7	Confirm by calculations that the tank(s) can safely receive the product.	
8	Confirm tank levels allow maximum flow rates at the start of receipt. If not, flow rate precautions shall be established and communicated to the pipeline company (e.g PARCO) and Terminal (e.g MHK, Ghatti) personnel.	
9	Confirm that QA documentation as specified by the supplier is available.	
10	Confirm that the Terminal and receiving location are able to initiate emergency shutdown of the transfer. This includes confirmation of items such as high-level alarm signals and ESD's.	
11	Confirm all communication systems are operating. (both PARCO & Terminal)	

Comments:
Checked By, Date and Time:

Appendix IV

Pipeline Receipt Log

The Terminal shall maintain a record of pipeline activities (Pipeline Receipt Log) such as a bound logbook or pipeline receipt form. The information shall be recorded for each tender and shall include the information below. This information shall be detailed for all tanks used for the receipt including interface tanks:

S.No.	Information	Response
1	Receiving Tank No. and Product	
2	Tank Initial Time	
3	Receiving Tank Dip, Temp and Density	
4	Pipeline lineup	
5	Irrelevant valves status (ensure they closed are closed / Sealed	
6	Batch No.	
7	The expected and actual starting time of the receipt.	Expected: Actual:
8	Hourly gross reconciliation, QC checks, Sampling	1- Time: 2- Time: 3- Time: 4- Time:
9	Receipt Completed	
10	Receiving tank final dip, temp and density	

Comments:
Checked By, Date and Time:

Note: The form shall include space to document information about the receipt to allow a proper handover during shift changes.

Appendix V

Equipment Requirement Check List

Equipment	TL Receipt Gantry	TL Loading Gantry	Pipeline Ops
Scully Coupling	Required	Required	NA
Emergency Shutdown Switch	Required	Required	Required
Fire Fighting Foam	Required	Required	Required
DCP Fire Extinguisher	Required	Required	Required
Oil Spill Recovery	Required	Required	Required
First Aid Kit	Required	Required	Required
Eye Wash / Shower	Required	Required	Required
Safety Harness, if working on height	Required	Required	NA
Helmet	Required	Required	Required
Safety Shoes	Required	Required	Required
Safety Goggles	Required	Required	Required
Hand Gloves	Required	Required	Required
High Visibility Coverall	Required	Required	Required
Hose Pipe	Required	NA	NA
Drip Tray	Required	NA	NA
Tool Box Kit	Required	Required	Required
Dip Rod	Required	Required	NA
Thermometer	Required	Required	Required
Density Meter	Required	Required	Required
Water Finding Paste	Required	Required	Required
Sampling Pot	Required	Required	Required
Bag for carrying equipment	Required	Required	Required
Sample Container and Sample Tags	Required	Required	Required
Dip Tape	NA	NA	Required

Appendix VI

Petroleum Product Handling - Management Controls

In order to reinforce existing operational policies and procedures, the following control are required to be implemented:

i. Daily physical dipping of all storage tanks before commence operations in the morning and after completion of operations in the evening.
ii. Final dips of every incoming and outgoing TL to be performed by Fossil management staff.
iii. Fossil management staff must be present / supervised tank lorry receipt, pipeline receipt and tank lorry loading. Contract staff shall not perform Tank lorry dipping or storage tank dipping.
iv. Daily "Tank Inventory Report" along with daily loss / gain calculation should be sent to Head Office and GM Operations latest by 10:30am.
v. Multiple operations activities (i.e. Receipt / Dispatch) should not be performed form any storage tank simultaneously.
vi. Tank Inventory Report - Book stock and physical stock to be reconciled on daily basis and loss / gain to be shared with GM operations by respective terminal Shift Incharges. The data is to be reviewed and cross checked by IM before forwarding.
vii. Dip book to be signed off by IM.
viii. Abnormal loss / gain to be investigated and resolved on the same day when reported. Always mention reason for product gain / loss in remarks column.
ix. Dipping of receipt storage tank to be conducted before and after tank lorry transfer and separate loss/gain also to be monitored.
x. Strict compliance on lockout / tag out during receipt and dispatch operations.
a) It would be good if we adopt lock and chain system for sealing of valves.
b) All non-operational tanks must be sealed or locked.
c) All sample test points must be sealed when not in use.

x. Redirection tank lorries inventory should be managed separately.
xi. Calibrated equipment should be used for measuring petroleum product. Calibration record should also maintained for the same.
xii. Loss / gain should be calculated on daily dispatch figures also in addition to existing throughput mechanism. Receipt loss / gain should be calculated separately. (Also highlighted above).
xiii. Pipeline stock should not be included in "Tank Inventory Report".
xiv. Weekly loss/ gain review meeting to be held every Tuesday of the week @10 am. Monthly Loss/Gain figures would be discussed on 2nd of every month.

Note:

In case of holiday on a certain day, the meeting would be held on next working day.