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ORLEN Unipetrol Doprava s.r.o.

ORLEN Unipetrol RPA s.r.o. (including branches BENZINA and POLYMER INSTITUTE BRNO)

PARAMO, a.s.

SPOLANA s.r.o.

## **SAFE OPERATION OF SLUDGE TANKS WHEN PUMPING OUT HYDROCARBON SLUDGE**

Approved by:

CEO / Executive Directors

Valid from:

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**Notice:** change proceeding subjects to Directive No 821.

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## 1 Purpose

This directive implements a technical standard ST S7 T6 Safe operation of sludge tanks when pumping out hydrocarbon sludge of mother company, PKN ORLEN S.A. into rules and regulations of ORLEN Unipetrol Group.

## 2 Scope of Validity

The Document is valid for the marked companies / branches:

- ☐ ORLEN Unipetrol a.s.    ☒ ORLEN Unipetrol RPA s.r.o.    ☒ BENZINA, odštěpný závod  
☒ POLYMER INSTITUTE BRNO, odštěpný závod    ☒ ORLEN Unipetrol Doprava s.r.o.  
☒ PARAMO, a.s.    ☒ SPOLANA s.r.o.

## 3 Terms, Definitions and Abbreviations

Apparatus	- a process column, reactor, tank or other installation, where the filling is extracted from.
Contractor	- a legal or natural person that is in a commercial law or civil law relationship with a company of the ORLEN Unipetrol Group and as a contracting party is obliged to provide contractual performance.
ADR	- Agreement Concerning the International Carriage of Dangerous Goods by Road.
Sludge Tank (Suction Truck)	- Sludge tank (suction truck) - a vehicle used for transporting sludge (sediment) and wastewater in liquid form, equipped with a tank and infrastructure ensuring safe pumping, loading, unloading and transportation of liquid substances. It is used in industry, among other things, for the purpose of removing sludge and sediments from waste water separators, sewage pits and other closed and open tanks, forming liquid waste from production processes. In the sense of ADR, this is a tank for vacuum pumping of waste and wastewater.
LOTO	- Lock-Out Tag-Out. It is a system, which ensures that during works on an industrial unit unwanted connection / switch on / release of disconnected / switched off / detained and secured energies will not occur.
Process of Pumping Out Hydrocarbon Sludge	- activities associated with the emptying of waste water separators, sewage pits and also other equipment and elements of the industrial and sewage network, i.e. pumping out liquid substances containing oil components.
Industrial Unit	- production, distribution and storage facilities, as well as other equipment for production of petrochemical and refining products within the framework of refining oil and other products in the companies of the ORLEN Capital Group.
Hydrocarbon Sludge	- slurry/sludge, which may contain substances of oil origin, which are present in waste water separators, sewage pits and also other equipment and elements of the industrial and sewerage network and equipment for waste water treatment serving for capture and treatment of waste waters from production/storage and distribution.
TPD	- technical and operational-technical documents provided by a manufacturer of machinery and devices, which must consist of necessary information enabling safe use of such machinery or equipment. The scope of such a technical and operational-technical documents shall follow requirements set by directives relating to the given device (machinery directive, pressure directive, ATEX, and if need be others).
Permit to Work	- a set of technical and organizational measures established through a prescribed form enabling to work on an industrial unit.

Maintainer	- technical division director or Facility Management head, head of relevant maintenance department or head of Buildings and Area Management Department or another designated employee, responsible for technical conditions of designated groups of material assets including maintenance, repairs, inspections/revisions and tests.
UNIRPA	- ORLEN Unipetrol RPA s.r.o.
User	- a head of a department (e.g. director of a division, plant, or head of a department, production facility or section) to whom the property is entrusted by the operator (company) for use. He is responsible for observing conditions for safe and reliable operation in accordance with instructions and regulations intended for its use, operation and service.
Customer	- for the purposes of this directive, the customer is the user.

## 4 Purpose and Scope, Exceptions and Application

### 4.1 Purpose and Scope

- 4.1.1 Setting safety rules for carrying out the process of pumping out hydrocarbon sludge using designated sludge tanks (suction trucks).
- 4.1.2 Setting minimal requirements on sludge tanks (suction trucks) used for pumping out hydrocarbon sludge from industrial units of ORLEN Capital Group.
- 4.1.3 Setting unified safety rules for pumping out hydrocarbon sludge from industrial units of ORLEN Capital Group.

### 4.2 Exceptions

- 4.2.1 Requirements set by this directive do not apply on sludge tanks (suction trucks) used for pumping out, carriage and collection of municipal waste waters.
- 4.2.2 Requirements set by this directive do not apply on extraction of apparatus fillings using vacuum devices, as requirements for such work is set by Directive No 433/3 „Extraction of Apparatus Fillings Using Vacuum Devices“.

### 4.3 Application

This directive ensures application of requirements set by PKN ORLEN S.A. standard to an appropriate extent within ORLEN Capital Group/ORLEN Unipetrol Group companies and ensures their transmission on contractual parties via Binding Standards and Information listed on web sides of individual companies or in binding documents, which are being handed over to contractors.

## 5 Requirements

### 5.1 Safety Rules Concerning Performance of Pumping Out Hydrocarbon Sludge by Sludge Tanks

#### 5.1.1 Information

- 5.1.1.1 Contractor is obliged to familiarize itself with document describing properties of sludge (e.g. hazardous waste identification sheet) in order to select relevant sludge tank for designated sludge before work commencement.
- 5.1.1.2 An assumption applies always, that each sludge bears dangerous properties (as flammability, explosiveness) due to characteristics of processes the sludge comes from if there is no document describing and confirming properties of the sludge.

#### 5.1.2 Restricting Entry of Persons into Pits/Separators/Sewerage

- 5.1.2.1 When pumping out sludge using sludge tanks entry of persons into pits/separators/sewerage shall be to the maximum possible extent avoided.

- 5.1.2.2 In case, entry of persons into pits/separators/sewerage is necessary, then it is possible only under compliance with internal regulations and directives valid in ORLEN Unipetrol Group relevant to entry of dangerous/confined spaces.

### 5.1.3 Earthing, Disconnection

- 5.1.3.1 Standard earthing point of the apparatus/installation for connecting the earthing of the sludge tank shall be designated by a contractor, maintainer and user before commencing any work. The maintainer confirms based on the former checks, inspections and physical check right at the place, that the earthing point is in a faultless conditions and it could be utilized. The work shall not be commenced until all imperfections are fixed, if found.
- 5.1.3.2 If the earthing point is equipped with an earthing continuity indicator, this indicator must signal earthing continuity. If earthing continuity is not indicated, work must not be started until the fault is rectified. The same procedure is followed with respect to the earthing continuity indicator on the sludge tank.
- 5.1.3.3 If there is no standard earthing point on the apparatus/installation, the contractor together with the user and maintainer shall designate an alternate place for connecting the sludge tank earthing and the maintainer shall then ask electrical maintenance emergency to check the efficiency of the alternate place for connecting the earthing. If the designated location is not effective with regard to electrostatic discharge, another alternate location must be designated. The designated place must be properly marked and a written report must be issued about the measurement performed. If the earthing continuity indicator on the sludge tank does not signal earthing continuity, work must not be started.
- 5.1.3.4 Before the work starts, the apparatus/installation shall be adequately prepared, i.e. energy/media supplies disconnected/blinded in compliance with requirements set in relevant internal regulations (blind plans, LOTO, etc.), if required. The user is responsible for preparation of the apparatus/installation.

## 5.2 Conditions for Pumping Out Sludge by Sludge Tanks

### 5.2.1 Customer, Purchaser, Contractor

- 5.2.1.1 The customer of the work concerning use of sludge tank is obliged together with the request on the work provide Purchase Division with a document describing properties of the given sludge. If a MSDS is available and/or a document on classification according to the ADR, both documents shall be attached as well. If those documents confirming properties of the given sludge to be pumped out are not available, the request for work shall consist of information, that the given sludge may bear dangerous properties (explosiveness and/or flammability) according to conditions and processes from which the given sludge comes.
- 5.2.1.2 The Purchase Division is during tender obliged to provide potential contractors with description of the sludge as well as description of the conditions, from which the sludge comes. If there are not available documents which will describe and confirm properties of the sludge to be pumped out, the tender request shall consist of an information, that the sludge may be a dangerous material (concerning explosiveness/flammability) with regard to conditions and processes from which the given sludge comes.
- 5.2.1.3 Contractor is obliged to elaborate Instructions for Safe Execution of Work based on elaborated Risk Analysis approved by professionally qualified person in risk prevention before work commencement.
- 5.2.1.4 Contractor shall ensure itself, that already loaded material in the sludge tank (if the sludge tank is not emptied and cleaned) is compatible with the sludge to be pumped out from the apparatus/installation (i.e. no risk of an unintentional chemical reaction) before commencing any work relevant to pumping out the sludge. Should it occur, that the emptiness and cleanliness is not assured or there are still doubts, the work must not be launched until this condition is resolved.
- 5.2.1.5 Contractor is obliged to familiarize in a provable way all persons participating on the work with the content of the Permit to Work and all its attachments (e.g. present risks, procedure of work, conditions for safe execution of work, etc.).
- 5.2.1.6 Pumping out the sludge is only possible on the basis of a Permit to Work. The need for regular analytical monitoring of the atmosphere from the point of view of explosiveness during the execution of the work must be taken into account as well. A permit to work is not required if the work is carried out by own employees (given by companies from the ORLEN Unipetrol Group), with own sludge tanks according to a developed operating

regulation/work procedure, with which all employees performing such activity are demonstrably familiar, and which ensures that all relevant requirements listed in this directive are met.

- 5.2.1.7 Before work commencement it shall be proceeded in compliance with article 5.1.3.1 - 5.1.3.4. If the procedure follows article No 5.1.3.3 a protocol on check of earthing efficiency including description of the area, where a measurement was done (so called Protocol on Functional Check) must be attached to the written Permit to Work.

**NOTICE! It is not allowed to change the earthing point during pumping works. If such a change is required, the works must be interrupted and procedure under articles No 5.1.3.1 - 5.1.3.4. must be repeated. Such a change must be subsequently projected into written Permit to Work otherwise the works could not continue.**

- 5.2.1.8 System elements designated for pumping out hydrocarbon sludge (i.e. hoses, pipelines, pipe elbows, couplings, etc.) must be manufactured from suitable materials and connected in a way enabling effective discharge of static electricity.
- 5.2.1.9 Contractor is obliged to secure the workplace in order to avoid access of people who do not participate on the works.
- 5.2.1.10 When pumping out flammable liquids, when the suction truck has two inlets (upper and lower), you must always use the lower (unloading) inlet.

## 5.2.2 Direction of Wind and Safe Distances

- 5.2.2.1 Contractor is obliged to place the sludge tank in such a way, that offgases from the tank are safely dispersed in the surrounding area, i.e. taking into account the direction of wind and direction of offgases. The direction of offgases and the direction of the wind must have the same direction, the direction of offgases must be downwind.
- 5.2.2.2 In the direction of dispersion of offgases there must not be at least within 10 m hot surfaces, which might initiate the offgases.
- 5.2.2.3 It is prohibited to do works with open flame within 30 meters in semidiameter from the works related to pumping out hydrocarbon sludge.
- 5.2.2.4 In the case of variable weather conditions (variable wind direction), the entire activity must be continuously monitored and, if necessary, the work must be interrupted immediately.

## 5.2.3 Unloading

- 5.2.3.1 In the case the carriage is exclusively done on the company premises within individual industrial units and the unloading will take place at the other industrial unit within the company premises, requirements/conditions set within this directive applies to an appropriate extent on unloading.

## 5.3 Minimal Requirements on Sludge Tanks Used for Pumping Out Hydrocarbon Sludge

- 5.3.1 Contractor is obliged to ensure, that the sludge tank:
- has necessary inspections and valid annual technical check and necessary certificates for given work,
  - has a certificate on ADR approval (approval of the vehicle for carriage of dangerous goods according to ADR),
  - has been chosen in a way, that the tank code comply with ADR and material to be transported,
  - is furnished with vacuum pump in explosion-proof design (EX),
  - has a safety switch, which enables in any time of the pumping/unloading process to disconnect accumulator from electrical installation,
  - is powered by diesel engine.
- 5.3.2 Contractor is obliged to ensure, that all elements of the sludge tank, which are in contact with pumped material (e.g. hoses, pipelines, pipeline elbows) are in faultless technical conditions, are capable dissipating electrostatic charge and have also been effectively earthed before starting work.
- 5.3.3 In case of carriage of dangerous goods, the sludge tank must be marked and labeled in compliance with ADR, and if the sludge tank leaves the premises it is furnished with all required documents in compliance with ADR.

5.3.4 Contractor is not allowed to use a sludge tank modified without manufacturer's approval. Any modification must be certified by the relevant manufacturer's protocol and certification or supervision body, as required by law.

## 5.4 Minimal Requirements on Sludge Tank Operational Personnel

5.4.1 Contractor is obliged to ensure, that operational personnel of the sludge tank:

- have relevant training and qualification concerning operation of the sludge tank,
- the driver has certificate on ADR Driver's Training (in case of carriage of dangerous goods according to ADR),
- have been familiarized with operational manual and TPD of the sludge tank,
- have been familiarized with Permit to Work for a given work and all its attachments,
- utilize relevant personal protective equipment for a given work.

## 6 Responsibility

Responsibilities are set in chapter 4 and 5 of this Directive.

## 7 List of Related Documents

### EVERYBODY

Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) in last wording

Directive 433/3 Extraction of Apparatus Fillings Using Vacuum Devices

### ORLEN Unipetrol RPA s.r.o. including its branches

Directive 402 Safety Rules for Workers of Other Organizations (without branches)

Directive 402/1 HSE Sanctions (without branches)

Directive 402/2 Safety Rules for Workers of Other Organizations (branch BENZINA only)

Directive 416 Basic Requirements on Lock-Out and Tag-Out (LOTO) System Implementation (without branches)

Directive 418 Safe Use of Machinery, Technical Equipment, Devices and Tools

Directive 429 Work in Dangerous Spaces

Directive 435 Permit to Work (Refineries only)

Directive 465 Permitting Works (without Refineries and branches)

Directive 465/1 Permitting Works (branch BENZINA only)

Directive 474 Chemical Substances and Mixtures (without branches)

Directive 0600 Chemical Substances and Mixtures (branch POLYMER INSTITUTE BRNO only)

Directive 844 Maintenance of Technological Equipment (without branches)

N 11 006 Rules for Electrical Equipment (internal standard – without Refineries and BENZINA)

PPU-801 Inspection Rule MI 4.31 – Rules for Operation of Electrical Equipment (internal standard – Refineries only)

### ORLEN Unipetrol Doprava s.r.o.

Directive 25 Safety Rules in Areas of UNIPETROL DOPRAVA, s.r.o.

Directive 45 Safety and Health Protection During Operation of Railway and Rail Transport

Decision 2015/02 Permitting Works

### SPOLANA s.r.o.

S-4.1.7. Annex No 8 Selected Breaches of Regulations and Sanctions



- S-3.16.6 Work with Chemical Substances
- S-3.22.8 Handling Chemical Substances
- S-3.11.7 Rules of Preventive Maintenance of Electrical Equipment and Inspections
- S-3.11.5 Permitting Work on Equipment and under Extraordinary Conditions

**PARAMO, a.s.**

- Directive 18-51 Basic Regulation Concerning Safety at Work
- Directive 18-53 Safety Rules of Paramo, a.s.
- Directive 18-58 Safe Use and Operation of Equipment
- Directive 18-07 Permitting Works
- Directive 18-12 Chemical Substances and Mixtures
- Directive 18-26 Inspection Rules of Electrical Equipment
- Directive 15-07 ADR/RID Application within PARAMO, a.s.
- Directive 429 Work in Dangerous Spaces