



International Requirements for Soil and Groundwater

Purpose

To specify international standards and other requirements formally adopted by Sakhalin Energy in relation to Soil and Groundwater *Risks*¹, in accordance with Russian Federation, Lender and Shareholder requirements.

This document supports Environmental Specialists to review compliance, maintain internal standards and specifications, and advise Managers on relevant requirements.

Who is this for?

- *Managers;*
- *HSE Professionals.*

Requirements

Soil and Groundwater Risk management activities shall comply with the provisions of the following conventions, standards and other requirements, except where exceptions/derogations are described in the table below.

- IFC Performance Standard 3 Resource Efficiency and Pollution Prevention (IFC, January 1 2012), Clause 10 Pollution Prevention
- IFC EHS Guidelines. Onshore Oil and Gas Development, April, 2007
- IFC EHS Guidelines. LNG Facilities, April, 2007
- EU Council Directive 80/68/EEC (Protection of groundwater against pollution caused by certain dangerous substances).
- WORLD BANK GROUP. INTERNATIONAL FINANCE CORPORATION:
 - 1) Health and Safety (EHS) General Guidelines. April 30, 2007
 - 2) Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development. April 30, 2007
 - 3) Environmental, Health, and Safety Guidelines for Crude Oil and Petroleum Product Terminals April 30, 2007
 - 4) Environmental, Health, and Safety Guidelines for Liquefied Natural Gas (LNG) Facilities April 30, 2007
- Royal Dutch Shell plc Soil and Groundwater Manual.

¹ Italicized terms in this document are included in the Sakhalin Energy HSE Glossary.

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| Relevant Standard Requirements | Project Specification | Comments |
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| <p>EU Council Directive 80/68/EEC (Protection of groundwater against pollution caused by certain dangerous substances)</p> | | |
| <p>Directive 80/68/EEC (Protection of groundwater against pollution caused by certain dangerous substances) covers measures required for the protection of groundwater against pollution caused by certain dangerous substances.</p> | <p>The main prevailing laws in the area of aqueous discharge and water management within the Russian Federation are:</p> <ul style="list-style-type: none"> Russian Federal Law on “Protection of the Environment”, 10-01-2002 N 7-FZ. This is the overarching legislative instrument applicable to the environment and outlining Governmental authority for its protection. It describes the ecological requirements for the siting, designing and building, reconstructing, commissioning and operation of facilities. The Law addresses the basic principles of environmental protection and the rational use of natural resources, and forms the foundation for further environmental legislation and regulation respecting land use, water resources, forests, mineral resources, ambient air protection and waste management. It also requires that Maximum Permitted Concentrations (MPC) be established for harmful chemicals, which under normal operating procedures are liable to be discharged to a water body. The MPC is that concentration of a chemical that does not affect the financial value of the receiving water body / environment. <p>Water use and discharge at all assets are managed and controlled under the prevailing water use licenses.</p> <p>Activities are also controlled through Sakhalin Energy Standard “Water Use and Aqueous Discharges”.</p> | <p>Comply</p> |
| | <ul style="list-style-type: none"> Water Code of the Russian Federation, 16-11-1995, N 167-FZ. The Water Code contains the requirements relating to water use and discharge. It specifies that the use of the water body be subject to the terms and conditions of a water use license that provides limits on water consumption, wastewater discharge and maximum allowable detrimental effect on receiving water bodies. It includes constraints relating to impacts on groundwater. It also requires that payments be made for the use of waterbodies. | |



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| | <ul style="list-style-type: none"> Russian Federal Law “On the Ecological Expert Examination (with Amendments)” 15-04-1998,N 174-FZ. Based in the requirements of this law (and others) a comprehensive report containing technical and economic description of the proposed project is developed (known as a TEOC report). Among other things, a TEOC report identifies potential environmental issues and includes an assessment of water use and water pollutants that shall be generated from a facility. Environmental controls and mitigation measures are specified. Approval of the TEOC report by various Russian Federation departments (e.g. Ministry of Natural Resources, Fisheries, etc) is the first step in the environmental permitting process. | |
| <p>Article 3 refers to List 1, which gives the families and groups of substances whose introduction into the groundwater must be prevented. List II of the same article give the families and groups of substances whose introduction into the groundwater must be minimised.</p> | <p>Sakhalin Energy is familiar with these lists and shall comply with Russian Federation Law pertaining to these substances.</p> | <p>Comply with Russian Federation Law pertaining to these substances.</p> |
| <p>Article 4 allows discharge of substances of either list of substances if it can be shown that discharge can not reach other aquatic systems or harm the ecosystem</p> | <p>The State Committee of the Russian Federation for Fisheries “List of Fishery Standards: Maximum Permissible Concentrations and Safe Reference Levels of Impact for Fisheries” VNIRO Publishing House, Moscow 1999 (ISBN 5-85382-205-5) lists chemicals the discharge of which is allowed at concentrations below the MPC value.</p> <p>This list of chemicals / products cannot be used directly as approval to discharge named chemicals. Necessary documentation (information only) and/or approvals process for a Water Use License must be observed in each and every case.</p> <p>Sakhalin Energy is familiar with the VNIRO list and this is applied in the determination of MPC values for each substance.</p> | <p>Comply with RF regulations</p> |
| <p>Article 5 re-enforces the fact that entry into the groundwater is not limited to direct injection but also as a result of activities on or in the ground.</p> | | <p>Acknowledged</p> |



SOIL AND GROUNDWATER STANDARD

Mandatory

International Requirements

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| <p>Annex – contains actual listing of families and groups of substances falling under this directive.</p> | <p>The State Committee of the Russian Federation for Fisheries “List of Fishery Standards: Maximum Permissible Concentrations and Safe Reference Levels of Impact for Fisheries” VNIRO Publishing House, Moscow 1999 (ISBN 5-85382-205-5) lists chemicals, the discharge of which is allowed at concentrations below the MPC value.</p> <p>This list of chemicals / products cannot be used directly as an approval to discharge named chemicals. Documentation and/or approvals process for a Water Use License must be observed in each case.</p> | <p>Comply with RF regulations</p> |
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