

	<p>Land Management Standard</p>	<p>Rev 06</p>
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APPENDIX 5

Site Preparation and Construction

Purpose

To manage *Risks*¹ relating to *Land Management* through effective management of *Site* selection, preparation and construction in compliance with relevant Russian Federation and adopted international requirements. Primary objectives are to:

- utilise appropriate techniques to minimise soil erosion and compaction and confine the effects of vegetation clearance and soil disturbance to within defined allocated land boundaries;
- use best practice construction techniques to minimise disturbance to fauna and flora and confine it within defined working areas;
- implement commitments relating to hunting, fishing, and gathering.

Who is this for?

- *Project Managers, Contract Holders* and *Contractors* with work scope including site preparation/construction.
- *Asset Managers* (onshore) in relation to maintenance activities involving site preparation/construction.

To be clear, this specification is primarily applicable for preparation and construction phases of projects and project expansions, however it is also applicable to maintenance activities in the operations phase if site preparation or clearing is required.

Requirements - General

Managers are *Accountable* for requirements 1 to 7 in their own organisation:

1. Identify work sites, prepare plans and obtain approvals.

- a. Identify all work areas that would be needed for safe construction (e.g. pipeline right-of-way, extra work space areas, pipe storage and contractor yards, borrow and disposal areas, access roads, etc). Conduct appropriate cultural, biological and geotechnical surveys before requesting internal authorisation to use the site. [FERC comparison - Upland Erosion Control, Revegetation and Maintenance Plan, IIIA1.]
- b. Planning of any activity shall document that the selection of the methods and techniques of construction avoid and/or minimise environmental impact, in accordance with requirements below.
- c. Specific permits, licenses and approvals (including those for siting construction camps and temporary worksites, for route selection of roads and pipelines, as well as activities such as hydrotesting and associated water abstraction and discharge) shall be acquired prior to the commencement of any work on the site.
 - The project sponsor must coordinate with the appropriate Russian Federation authorities and obtain relevant recommendations from the authorities responsible for soil conservation and/or land management regarding permanent erosion control and revegetation specifications.
 - If construction activities have the potential to impact upon any waterbody, all relevant decisions and permits shall be obtained prior to commencement of construction activities in accordance with RF requirements.

2. Minimise cleared footprint and avoid and manage sensitive sites.

- a. The area of land to be cleared shall be minimised.
 - For example, efforts shall be made to upgrade existing access roads, and coordinate activities across different Asset and Project Teams to use existing or joint cleared areas or right-of-ways (ROWS).

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



- Tree clearance shall be kept to a minimum, and limited to the footprint of the site and any safety buffer zone. Within construction site boundaries existing vegetation shall be retained wherever possible. Trees and areas to be preserved and protected shall be identified and clearly marked as the work area is defined. [EIA V4; V5: 3.8.1 and 3.9.1, Table 1.5 in Section 1.5.3.]
 - Construction activities shall be kept strictly to the footprint of designated site boundaries and/or the RoW.
- b. Environmentally sensitive or valuable areas shall be avoided, such as nature reserves, archaeological sites, and areas inhabited by sensitive species. Areas adjacent to surface water bodies are to be avoided to the maximum extent possible.
 - c. Where possible, and as informed by survey data, construction activities shall avoid Red Data Book (RDB) plants or ensure their translocation to a safe and suitable area prior to construction. [EIA V5: 3.7.1, Table 1.5]
 - Construction personnel shall be briefed about the location and importance of rare fauna and flora in the area during the induction process. [EIA V5: 3.7.1]
 - d. Site location and design (including route selection for roads and pipelines) shall be optimised in order to minimise the amount of soil to be excavated and disturbed within the site/project boundaries.
 - Wherever possible use existing tracks and roads. [EIA V4, Table 2.28]
 - In remote or extremely sensitive areas, consideration shall be given to using alternatives to conventional road construction. For example, the use of temporary/portable road systems and/or airlifting of equipment, material and personnel should be considered where practicable.
 - e. Construction and clearing of areas prone to erosion or landslides shall be avoided to the maximum extent practicable (for example, areas of high slope or sensitive soils).
 - f. Minimise blasting activities, carry out risk and impact assessment and determine controls prior to any blasting activity, and carry out in seasonal windows that avoid disturbance of hibernating wildlife. [EIA VOL 4, Table 2.28]
 - g. Identify and manage sites and items of cultural heritage in accordance with the Cultural Heritage Specification².
 - h. Implement the Unexploded Ordnance Procedure where applicable for sites at risk.
 - i. Implement river and wetland crossings in compliance with River Crossings Specification.
 - j. Implement site preparation and construction in compliance with Onshore Pipelines Right of Way Specification.
 - k. Implement Sakhalin Energy Hunting and Fishing Policy (applicable for major construction activities), as per Fisheries, Hunting and Gathering Specification.

3. Identify and manage irrigation system impacts.

- a. Locate existing drain tiles and irrigation systems;
- b. Contact landowners and local soil conservation authorities to determine the locations of future drain tiles that are likely to be installed within 3 years of the authorized construction;
- c. Develop procedures for constructing through drain tiled areas, maintaining irrigation systems during construction, and repairing drain tiles and irrigation systems after construction;
- d. Engage qualified drain tile specialists, if required, to conduct or monitor repairs to drain tile systems affected by construction. Use drain tile specialists from the project area if available;
- e. Maintain water flow in crop irrigation systems, unless shutoff is coordinated with affected parties.
- f. Irrigation/drainage systems shall be restored after construction if required by the land owner/authorities. [FERC comparison - Upland Erosion Control, Revegetation and Maintenance Plan IIIB1-4.]

² Underlined items in this document refer to Sakhalin Energy Controlled Documents.

**4. Manage soil disturbance, erosion, restoration and reinstatement during construction.**

- a. Implement requirements of the Soil Reclamation and Site Reinstatement Specification.

5. Provide equipment and materials.

- a. Dedicated equipment and materials shall be used for drainage control, sediment control, erosion control, and re-vegetation, during temporary and permanent re-instatement.
- b. Necessary equipment shall be provided to implement an effective combination of both temporary and permanent drainage control, sediment control, erosion control, and re-vegetation practices. Depending on work scope this equipment can include:
- Hydroseeders;
 - Farming equipment;
 - Bulldozers, with preference given to the smallest equipment available;
 - Lighter equipment will be used for berms such as sheeps-foot rollers and small light excavators;
 - Hand tools, such as shovels, rakes, picks, hammers, saws, etc. for installing silt fence, erosion control blankets and other soil conservation practices;
 - A woodchipper or other equivalent method employed for mulching or stabilising bare slopes. Geo-jute or hydroseeding with mulch and starch are considered equivalent.
- c. All relevant equipment for both temporary and permanent reinstatement shall be available at each construction site and shall remain present up to the point of completion of reinstatement activities.
- d. Each construction site shall be responsible for obtaining the necessary materials to implement an effective combination of drainage control, sediment control, erosion control, and re-vegetation practices. Such stocks must be sufficient to perform both temporary soil stabilization measures (e.g. temporary seeding using fast growing species suitable for the circumstances, silt fencing, installation of erosion control blankets, mulching, etc.) and/or immediate reinstatement of all areas where construction activities have been completed. Stocks of materials shall include amounts sufficient to treat all areas currently disturbed by construction activities and those areas projected to be disturbed.

6. Implement special fire protection measures at the welding and construction sites. [EIAA – Pipeline construction in wetlands. Section 3.7.3.]

- a. These shall include the use of fire-fighting vehicles and fire extinguishers at specified locations.
- b. Smoking shall only be allowed in specific areas.

7. Training

- a. Contractor shall designate Field Teams to install and maintain drainage, sediment, erosion control and re-vegetation practices.
- b. Contractor shall appoint to each Field Team a supervisor experienced in the design and installation of soil erosion protection technologies. The Field Teams shall be trained in the proper application, installation, and maintenance of drainage control, sediment control, erosion control, re-vegetation practices and soil bioengineering principles.
- c. All training, both formal and informal, shall be documented and shall include a list of those trained and responsible for fieldwork.