APPENDIX

A-1. Questionnaire

for collecting data about traditional nature use and livelihoods

Prepared by Olga Murashko

1. GENERAL INFORMATION

1.1. Name and age

1.2. Ethnic group affiliation

1.3. Place of residence (according to registration and in fact)

1.4. Place of work and duty station (according to the work-book, and in fact)

1.5. Work with traditional economic occupations (please underline):

individually, in an extended family (clan community), SPK (cooperative), permanently, seasonally, from time to time

1.6. Is the extended family (clan community) or national enterprise registered?

If so, where and when and by which authority?

1.7. How many members are in your family officially ( )? How many representatives are in your extended family (clan community) ( ) or indigenous enterprise ( )? How many of these belong to numerically small indigenous ( ) and other peoples' ( ) representatives?

1.8. Please, point the places of your traditional activity. (Refer to map: all geographical names must be noted on the map!)

1.9. Do you have officially stated trading areas of economic significance? Is this a Territory of Traditional Nature Use (TTNU) for composite use? When and where was the TTNU registered?

1.10. Show on the map the location and extent of your trading areas. Refer to map!

2. FISHING

2.1. What kind of fish do you fish and when during the year do you usually fish?

2.2. Do you remember in which area your ancestors fished? Is there any family-based fishing area? (Refer to map: all geographical names must be marked on the map!)

If the respondent does not fish, go to questions 2.17-2.24. (If there is a fisherman in the family, ask him separately about fishing.)

2.3. Does your extended family (clan community) have a special fishing place?

2.3.1 Do you use this place together with other families?

2.4. How far away from your house is this fishing-ground situated? (Refer to map: all geographical names must be marked on the map!)

2.4.1 How do you travel there and how do you transport the catch?

2.5. Who gave you the right to use the fishing-ground (s) and who registered this?

2.6. For how long time did you attain the right to use the ground? What form of use, possession and property do you have on this ground?

2.7. Do you need a special permission to fish (contract, license, quota, ticket)? Do you have to pay for the right to fish? If so, to which authority do you pay and how much do you pay?

2.8. Have you changed your fishing-ground during the last 10 years and why? (Refer to map: all geographical names must be marked on the map!)

2.9. Are there any industrial structures (drilling rigs, oil/gas pipelines, permanent settlements, roads, quarries, crossings, etc.) that have had an effect on fishing during last ten years? In what way? (Refer to map: all geographical names must be marked on the map!)

2.10. In what way do you fish? (This concerns both individual and collective fishing.)

2.11. Does your family have fishing tackle, nets, boat, motor, small boat (*please underline, enter others, what sort*)? Which of this gear do you use together with other families?

2.12. Which quantity of fish and fish products do you take for your own family?

2.13. How do you preserve the fish (freezing, salting, smoking, other methods)?

2.14. Have the quantity and species of fish changed during the last ten years? If so, what kind of changes have you observed? What do you think this is connected with (for instance: low

water, disappearance of water bodies, pollution, changes of coastline, etc.)?

2.15. Do you give away fish to other people? (yes/no)

2.16. Do you barter the fish with relatives and other people? (yes/no).

2.17. Do you receive fish as a gift? (yes/no) Where from?

2.17.1. Do you buy fish in a shop? (yes/no)

2.18. What portion of all food consumption by your family is fish that is prepared by you (can you specify in kg or in parts, for example, the fish makes a quarter of all foodstuffs that we eat)? Include:

2.18.1. Fish from relatives and friends

2.18.2. Store-bought fish

2.18.3. Could you manage without fish caught by you or the fish received from others, or replace it with something else?

2.19. How often / how many times a week do you eat fish?

2.20. Have you or members of your family have had any diseases, indigestion or other ailments which, in your opinion, are connected with contamination of fish? (If so, include details!)

2.21. Have you or members of your family have had any diseases, indigestion or other ailments which, in your opinion, are connected with contamination of drinking water? (If so, include details!)

2.22. Where do you take drinking water and water for cooking at home?

2.23. Where do you take drinking water during migration, hunting or fishing?

2.24. Do you always boil water for drinking?

The next questions are only for those who fish.

2.25. Do you sell fish or fish products? Quantity? In what way? Where and to whom? Is it legally settled?

2.26. Do you join others of the extended family (clan communities), brigade, and indigenous enterprise to sell the fish products?

2.27. What kinds of organisations in terms of traditional fishing do you think are necessary (optimal) for indigenous inhabitants of your region?

2.28. In your opinion, in traditional indigenous homelands, who should possess the right to distribute fish between users, to the state, or public self-management bodies of the population?

3. MARINE MAMMAL HUNTING

3.1. Do you hunt marine mammals?

If not, move to question 3.5. If there are members who hunt marine mammals, ask them.

3.2. What kind of animals and during which time of the year do you hunt?

3.3. Does your family have a special hunting area for marine mammals? Or do you hunt together with other families?

3.4. Is your hunting area far away from your home? How do you travel there and how do you transport the catch? (Refer to map: all geographical names must be marked on the map!)

3.5. Do you remember in which area your ancestors where hunting? (Refer to map: all geographical names must be marked on the map!)

If yes, ask the following questions. If the respondent is not fishing, go to questions 3.10.2, 3.11 and 3.12.

3.6. Have you changed your hunting areas during the last ten years? Why? (Refer to map: all geographical names must be marked on the map!)

3.7. Are there any industrial structures (drilling rigs, oil/gas pipelines, permanent settlements, roads, quarries, crossings, etc.) that have had an effect on hunting marine mammals during the last ten years? In what way? Was it a positive or negative effect? (Refer to map: all geographical names must be marked on the map!)

3.8. Have the frequency and species of marine mammals changed during the last ten years? If so, what kind of changes have you observed? What do you think this is connected with (for instance, climate change, blizzards, changes of coastline, etc.)?

3.9. How much marine mammal meat and products do you take for your own family? For your dogs? How do you preserve the meat?

3.10. Do you give away marine mammal meat as presents? (yes/no)

3.10.1. Do you exchange it with relatives/friends? (yes/no)

3.10.2. Do you receive meat as presents? (yes/no)

3.11. How often, how many times a week ( )/ a month ( ) do you eat marine mammal meat?

3.12. Have you or members of your family had any diseases, indigestion or other ailments which, in your opinion, are connected with contamination of marine mammal meat? (If so, include details!)

The next questions are only for those who hunt marine mammals.

3.13. How were your hunting areas chosen? Are they registered on your or your family's name? For which period of time do you have the hunting license? What form of use, possession and property do you have in this area?

3.14. Do you have to pay for the right to hunt marine mammlas? ? If so, how much and to whom do you pay?

3.15. When you hunt as an individual or collectively with others, what way do you hunt?

3.16. Does your family have fishing tackle (what type?), nets, boat, motor, small boat?

3.17. What do you use together with other families?

3.18. Do you sell marine mammal meat or its products? Exchange? How much? In what way? To whom?

3.19. Do you join others in an extended family (clan community), brigades, or indigenous enterprise to sell marine mammal products?

3.20. What kinds of marine mammal hunters' organisations to sell your products do you think have a future in your region?

3.21. In your opinion, in traditional indigenous homelands who should possess the right to distribute quotas between users – to the state, or public self-management bodies of the population?

4. GATHERING

4.1. What kind of plants do you gather? Do you gather other biological resources (eggs, molluscs, seaweed, others)? Underline, or specify others.

4.2. Do you preserve them? Do you know any ways to prepare wild plants and other gathered resources (drying, cooking, other)?

4.3. How much wild plants do you prepare for your family needs? (Please try to value in liters; berries, mushrooms, herbs, others).

4.4. Do you exchange with relatives/friends?

4.5. In which places do you collect wild plants and other gathered resources? (Refer to map: all geographical names must be marked on the map!) Is this gathering place only used by your family?

4.6. Do you have to pay for the right to gather wild plants or other biological resources? If so, how much and to whom do you pay?

4.7. Have their been any changes in these gathering areas during the last ten years? Why?

4.8. Are there any industrial structures (drilling rigs, oil/gas pipelines, permanent settlements, roads, quarries, crossings, etc.) that have had an effect on gathering during the last ten years? In what way? Was it a positive or negative effect? (Refer to map: all geographical names must be marked on the map!)

4.9. Have the quantity or species of plants changed during the last ten years? If so, what kind of changes have you observed? What do you think is the cause?

4.10. Have you or members of your family had any diseases, indigestion or other ailments which, in your opinion, are connected with contamination of plants? (Inform in more detail!)

4.11. Do you sell wild plants or other gathered resources or their products? What volumes? To whom? Where?

4.12. Are you united with other families in an extended family (clan community) or indigenous enterprises for gathering wild plants and other biological resources or for selling these? What kind of experience do you have; what is positive and negative about it?

4.13. What kinds of organisations in terms of gathering do you think are necessary (optimal) for your region?

5. HUNTING (LAND MAMMALS)

5.1. What kinds of wild [land] animals do you hunt?

If the respondent does not hunt, go to questions 5.4 and 5.10. Ask a member of the family who hunts.

5.2. Does your family (community) have a specific hunting area? Or do you use such an area together with other families?

5.3. Is this area far away from your house? How do you reach it and how do you transport the catch(cross-country vehicle, snowmobile, dog or reindeer sledges)? (Refer to map: all geographical names must be marked on the map!)

5.4. Do you know where your fathers and grandfathers hunted? (Refer to map: all geographical names must be marked on the map!) Do you feel that this is your hunting ground today?

5.5. Have you had to change your hunting areas during last ten years? Why?

5.6. Are there any industrial structures (drilling rigs, oil/gas pipelines, permanent settlements, roads, quarries, crossings, etc.) that have had an effect on hunting during the last ten years? (Refer to map: all geographical names must be marked on the map!)

5.7. Has the frequency or species of hunted animals changed during the last ten years? If so, what kind of changes have you observed that may cause it (for instance, animal diseases, lack of food, climate-related changes like deep snow, ice, more rain in summer, etc.)?

5.8. How was the hunting area selected and registered? For which period of time do you have the license? What form of use, possession and property do you have in this area? Is it legally settled?

5.9. Do you need to pay for the right to hunting? If so, how much and to whom do you pay?

5.10. Are you are engaged in hunting for *meat*? What kinds of wild animals?

5.11. How often do you eat the meat of wild animals? What share of your annual meat diet is the meat of wild animals? Could you manage without it (for instance, buy meat in a shop)?

5.12. Are you engaged in hunting for *furs*? What share of your budget is from the income of fur hunting? Could you manage without it?

5.13. Do you process skins of fur animals? Or do you hand them over to others for processing?

5.14. Where and to whom do you hand over or sell skins of fur animals?

5.15. Have you joined with others to sell furs? What kind of experience do you have; what is positive and negative about it?

5.16. What forms of organisations pertaining to hunting would be necessary (useful) for your area?

5.17. In your opinion, in traditional indigenous homelands who should possess the right to distribute quotas between users – the state, or local organisations of the population?

6. REINDEER HUSBANDRY

6.1. Does your family have reindeer and pastures at the present time?

If the answer is no, go to questions 6.2, 6.13-6.15, 6.18-6.19

6.2. Were your ancestors reindeer herders, and if so, where? (Refer to map: all geographical names must be marked on the map!) Were there any special (for your family, clan community) migration routes or areas?

6.3 Do you use pastures together with other families?

6.3.1. Are you a member of a clan community, SPK, other organisation or union?

6.3.2. Do you need to pay for using these pastures? If so, how much and to whom do you pay?

6.4. How are pastures distributed and allotted?

6.4.1. Are quality, herd size and remoteness of pastures taken into consideration for the allotment process?

6.5. How do you distribute duties for joint pasturing? Do you herd your reindeer yourself? Or in turns with other families, members of a community? Hired herders? Do you have to pay for using hired herders?

6.6. Specify places of nomadic movements and seasonal settlements, reindeer calving and slaughtering. (Refer to map: all geographical names must be marked on the map!)

6.7. Have you had to change the annual route during the last ten years? Why? (Map, draw old routes).

6.8. Are there any industrial structures (drilling rigs, oil/gas pipelines, permanent settlements, roads, quarries, crossings, etc.) that have had an effect on reindeer husbandry during the last ten years? (Refer to map: all geographical names must be marked on the map!) What are the positive and negative influences on people and reindeer?

6.9. Have there been any drastic changes in the size of your herd during the last ten years? How? What do you think this is owing to (for instance, diseases, lack of pasture lands, climate-related changes such as deep snow, ice, more rain in summer, others)?

6.10. If you are in the tundra, does your family go there as well, in the winter as well as in the summer?

6.10.1. How long time do you usually spend in the village? How long time with the herd?

6.11. How many reindeer do you slaughter annually? When?

6.11.1. Do you slaughter your own reindeer yourself? Or does it happen without your participation?

6.12. How much meat do you leave for yourself? How much do you deliver or sell?

6.13. How much meat do you give to your family?

6.14. Do you buy reindeer meat? How much in a year? Where (in a store, from private people)?

6.15. How much reindeer meat does your family consume during a year?

If the respondent has difficulties answering, ask in which season and how many times a week they have reindeer meat?

6.16. How are the reindeer skins and food distributed among members of your family or cooperative?

6.17. Can you receive reindeer skins for the needs of your family? Or do they go to any enterprise for processing?

6.18. Are you engaged in processing reindeer skins? Manufacturing for clothes and footwear? For your family or/and for sale?

6.19. Do you buy traditional clothes and footwear from reindeer skins for cash?

7. SUPPLEMENTARY ECONOMY (PART-TIME FARM)

7.1. Do you have a kitchen garden? A greenhouse? How much and what kind of plants do you cultivate?

7.2. Does the production from your kitchen garden meet your family's needs in terms of vegetables? For what period?

7.3. Do you exchange vegetables with relatives or neighbours? Whom?

7.4. Do you buy vegetables? Where and how much?

7.5. Do you have domestic animals? What type and how many?

7.5.1. Where and how do you prepare food for animals? (Refering to the map, please indicate where animal food is grown and hay is made.)

7.5.2. Do you exchange milk and meat with your relatives or neighbours?

7.6. Do you buy milk and meat products? Where, from whom, how much, how often?

7.7. Are there any industrial structures (drilling rigs, oil/gas pipelines, permanent settlements, roads, quarries, crossings, etc.) that have had an effect on pasturing of animals and hay-making during the last ten years? (Refer to map: all geographical names must be marked on the map!)

7.8. Have you noticed any changes concerning vegetables and the quality of hay and pastures during the last ten years? If so, what kind of changes? What could be the cause?

8. SACRED PLACES

8.1. Are special places of the following kinds known to you within the areas of your traditional activity?

- burial places (yes/no)
- old settlements or nomadic camps (yes/no)
- places of ancient events (yes/no)
- places where it is necessary to stop and bring a sacrifice to the owner of a place (yes/no)
- places where it is recommended not to go (yes/no)
- others

Write down the names and significance of these places (in Russian and/or native language). (Refer to map: all geographical names must be marked on the map!)

8.2. Do these places have special attributes? What is distinctive about them (for instance, they are hills visible from everywhere, unusual plants grow there, or they are connected with a special event ...)?

8.3. Do you visit these places in your daily life and preserve customs connected with them? How frequent do you go there, in connection with which events? (Refer to map, please mark visited and not visited sacred places).

8.4. If these places are no longer actively used, when did people cease to go there? Why (for example, because of struggle against prejudices during Soviet times, old people did not tell or show them, absence of information, fear)?

8.5. Do you know the customs of your ancestors in relation to these places (what they did, brought, how often, with what purposes, etc.)?

8.6. Are there any industrial structures (drilling rigs, oil/gas pipelines, permanent settlements, roads, quarries, crossings, etc.) that have had an effect on access to sacred places or have caused their destruction during the last ten years? (Refer to map: all geographical names must be marked on the map!)

8.7. Do you know if and when these places were exposed to destruction or defilement? Who did it? Your people or somebody else? Were there any consequences of these destructions and defilements?

9. STRUCTURE OF YOUR INCOMES AND OUTCOMES

9.1. Specify (estimate on a scale from 1 to 5) the importance of different kinds of activity for your family's subsistence:

a) reindeer husbandry

b) fishing

c) marine mammal hunting

d) hunting

e) gathering

f) part-time farming

9.2. To what extent do the total of traditional kinds of activities:

9.2.1. cover the needs of your family for food (a quarter, about half, more than half, almost completely, or specify another proportion, for example, 5-10 %)

9.2.2. cover the income of your family in terms of money (a quarter, about half, more than half, almost completely, or specify another proportion, for example, 5-10 %)

9.3. To what extent do other sources of income contribute to your family budget:

9.3.1. salary for work in an industrial enterprise

9.3.2. salary for work in other establishments (a quarter, about half, more than half, almost completely, or specify another proportion, for example, 5-10 %)

9.3.3. receipts from the state in the form of grants, indemnifications, pensions (a quarter, about half, more than half, almost completely, or specify another proportion, for example, 5-10 %)

9.3.4 compensation payments from industrial enterprises (a quarter, about half, more than half, almost completely). Do you consider these compensation payments equivalent to the losses suffered in terms of your traditional subsistence activities?

Please, indicate the total monetary income of your family per year.

9.4. What kind of products do you usually buy and where do you buy them?

9.5. What share of your family budget do you spend (estimate in %)?

- on the purchase of foodstuffs
- on the maintenance of housing
- on the purchase of clothing
- on the purchase of hunting and fishing equipment
- on the purchase of fuel, including gasoline and diesel
- on transportation
- on the purchase of medicines and medical treatment
- on the eductaion of children
- other

Check up together with the respondent that the results make up 100%, count once again.

9.6. If your family's income falls short of your family's monetary needs, please estimate the amount of the deficiency.

9.6.1. What total sum, approximately, does your family monthly need to cover all expenses?

9.6.2. Can you save a monthly sum?

10. INFLUENCE OF PRESENCE OF WORKERS OF THE INDUSTRIAL ENTERPRISES ON THE TUNDRA

10.1. How do you estimate the influence of activities of industrial enterprises, located on the tundra, on your life?

- does not influence in any way
- positive influence (what)
- negative influence (what)

10.2. Whom, in your opinion, should the industrial enterprises pay in case of negative influence on the natural resources necessary for traditional occupations: the inhabitants, a traditional wildlife management body on the tundra, production associations of the indigenous and local population, local government institutions, the district?

10.3. Do the industrial companies discuss their projects with local residents before they start to work?

10.3.1. Who informs you about the results of these discussions?

10.3.2. Do representatives of the companies go to your settlement for discussion?

10.3.3. Is there a distribution of invitations to inhabitants to gather in the settlement for discussions?

10.4. Please tell about which industrial activities you have been informed in advance when you participated in such discussions during the last 5 years?

10.5. During these discussion meetings, did they ask for your opinion or were you only told about their plans?

10.5.1. If you gave advice, did they consider it?

10.6. Has the attitude of the industrial enterprises towards the local inhabitants changed during the last ten years? Has it became easier or more difficult to find a common understanding?

10.7. Which attitudes have developed between local people and workers of the industrial enterprises? Do you deal with them in the following connections? For example:

- can you trade with them? (yes/no)

- work at the enterprise? (yes/no)

- work for them as a guide? (yes/no)

- use their transportation services (helicopter, lorries)? (yes/no)

- spend free time together with them (for example, watch TV)? (yes/no)

- be engaged in common business (for example, catching and selling fish, other sharing of natural resources)? (yes/no)

10.8. Do you think it is better to live on the tundra or to leave it after the oil companies started their activities?

11. OPINION OF INHABITANTS ABOUT CHANGING LIVING CONDITIONS AND ABOUT THEIR FUTURE

11.1. Do you think the conditions of your settlement, traditional areas and livelihood of your family have improved or worsened during the last …

- 20 years? Have they improved or worsened? Why? What has changed?

- ten years? Have they improved or worsened? Why? What has changed?

- 5 years? Have they improved or worsened? Why? What has changed?

11.2. Do you think subsistence in your settlement become easier or more difficult during the last 20 years?

- ten years? Why, what has changed?

- 5 years? Why, what has changed?

11.3. Do you think your and your family members' work support your life completely?

11.4. What other sources apart from yourself and your family contribute to the support of your family and your settlement?

11.4.1. The authorities of the NAO? What exactly?

11.4.2. Oil companies? What exactly?

11.4.3. What other sources?

11.5. Do you see a context between the future of your family and the future of your settlement? (yes/no)

11.5.1. Do you have reflections on the future of your settlement? (yes/no)

11.6. Could you name the problems of the development of your settlement?

Divide these problems into:

- internal problems of the settlement (for example, an inconvenient geographical position, lack of qualified personnel, lack of workplaces, lack of housing, other);

- external problems of the settlement (absence of convenient transportation links with the city, difficulties of getting a proper education, lack of or poor medical aid, supply, others).

11.7. What is necessary to solve the problems of your settlement?

11.8. What can you, together with your fellow inhabitants, do to support the future development of your settlement?

11.9. What have you, together with your fellow inhabitants, already done to support the future development of your settlement?

11.10. What threats to the existence of your settlement can you see in the future?

11.11. Can the population of your settlement be prepared for this threat and prevent it, or not?

11.12. To which extent is your opinion about the future of your settlement based on your own experience, opinions of other people, or information received from mass-media?

A-2. Legislation related to oil-and-gas development and indigenous peoples

Rodnik Legal Center:

LEGISLATIVE REQUIREMENTS FOR THE HYDROCARBON INDUSTRY AND PROTECTION OF THE RIGHTS OF NUMERICALLY SMALL INDIGENOUS PEOPLES OF THE NENETS AUTONOMOUS OKRUG

E. Khmeleva, cand. jur. sci., and T. Grechushkina, lawyer, Chairman of Board
Moscow 2008-2009

Contents:

Introduction

I. General issues
1. Rights of NSIPN[56] to conduct traditional ways of life and protection of their primordial residence area
2. Territories of traditional land use and hydrocarbon exploitation
3. General legislative issues regarding mineral exploitation

II. Regulation of mineral exploitation and indigenous rights in the NAO during the allotment of exploitation sites
4. The process of allotment of exploitation sites
5. The process of allotting ground for investigation, extraction and transportation of oil and gas; conditions and restrictions
6. Problems concerning state assessments
7. Opportunities for participation of representatives of the NSIPN in making decisions infringing their interests

III. Indigenous rights and duties of the hydrocarbon industry
8. Isues of environmental protection during hydrocarbon exploration and exploitation
9. Compensation for damage to the traditional way of life and Territories of Traditional Nature Use as a result of hydrocarbon investigations, extraction and transportation

IV. Termination of mineral exploitation and liability for infringement of legislation
10. Basis for termination of exploitation rights
11. Responsibilities concerning infringement of mineral legislation

[56] NSIPN: Numerically small indigenous peoples of the North

Introduction

The purpose of the present work is the review and analysis of legislative and statutory acts related to oil and gas extraction in the Nenets Autonomous Okrug (NAO). The main focus of this work is the requirements and obligations that are incumbent upon the hydrocarbon extraction companies that have a bearing on the interests and rights of indigenous peoples (NSIPN)[57] as well as the protection of the environment.

In considering these issues it was also necessary to investigate the procedure of allocation of subsoil resources, and the rights of the indigenous people living in this area.

There is another problem which deserves mention: a number of indigenous peoples' rights defined by legislation have a general declarative character and are lacking delineations of the specific duties of the resource extractors to preserve these rights. At the same time, applying Clauses 2 and 18 of the Constitution of the Russian Federations defining the validity of human rights, it is probably possible to achieve enforcement and observance of indigenous peoples' rights by means of the Office of Public Prosecutor and through legal proceedings. Questions concerning the practice of protection of these rights are, however, outside of the scope of this study.

I. General issues

1. Rights of the NSIPN to conduct traditional ways of life and protection of their primordial residence area

According to Clause 69 of the Constitution, the Russian Federation "guarantees the rights of numerically small indigenous peoples according to the conventional principles and norms of international law and the international contracts of the Russian Federation". According to item "m" of Clause 72, the protection of the primordial inhabitancy and traditional ways of life of the NSIPN, is a joint responsibility of the Russian Federation and its administrative subunits.

Three federal laws are completely devoted to the rights of the NSIPN:

- The federal law N 82-FZ, "On guarantees of the rights of numerically small indigenous peoples of the Russian Federation" (30 April 1999; revised on 22 August 2004 and 26 June 2007);
- The federal law N 104-FZ, "On the general principles of organising communities of numerically small indigenous peoples of the North, Siberia and the Far East of the Russian Federation" (20 July 2000; revised on 21 March 2002, 22 August 2004 and 2 February 2006);
- The federal law N 49-FZ, "On Territories of Traditional Nature Use of numerically small indigenous people of the North, Siberia and the Far East of the Russian Federation" (7 May 2001; revised on 26 June 2007).

In addition, a number of acts contain positions which define the special status of the NSIPN with respect to the protection of their traditional way of life and primordial inhabitancy.

For example, "traditional places of residence and economic activities of numerically small indigenous people of the Russian Federation" are specially protected according to Part 3 of Clause 4 of the federal law N 7-FZ, "On protection of the environment" (10 January 2002).

The rights accorded to representatives of the NSIPN that can be used in their relationships with the hydrocarbon enterprises are listed in the federal law N 82-FZ, "On guarantees of the rights of numerically small indigenous peoples of the Russian Federation" (30 April 1999). Clause 8 of this law concerns the rights of the NSIPN to protection of their primordial inhabitancy, traditional ways of life, trades and crafts:

1. Numerically small peoples and the associations they have formed to protect their primordial inhabitancy, traditional ways of life, trades and crafts have the right:
   1. to use gratuitously various types of land in their traditional areas, which are necessary to practise their traditional trades and crafts, and to use gratuitously common, widespread minerals[58], as established by federal legislation and regional legislation;
   2. to participate in controlling the use of these lands;
   3. to participate in controlling the observance of federal and regional laws and laws that bear on protection of the natural environment in the context of the industrial use of the land and natural resources, construction and reconstruction of economic and other developments on the traditional lands of the NSIPN;
   6. to participate in ecological and ethnological assessments in the context of prospective federal

[57] NSIPN: Numerically small indigenous peoples of the North

[58] This term refers to a list of common minerals and stones, defined by Russian law, which normally are used for building and construction purposes.

and regional programmes of natural resource development and environmenal protection of traditional lands;

8. to indemnification for losses caused by damage to Territories of Traditional Nature Use by commercial enterprises, as well as physical persons.

According to the federal law "On guarantees of the rights of indigenous numerically small peoples of the Russian Federation" (revised on 22 August 2004 and 26 June 2007), the administrative subunits of the federation do not have the power to pass acts protecting rights of the NSIPN. Nevertheless, at the level of the NAO, these issues are regulated by both federal and NAO legislation, for example, the NAO law N 671-OZ, "On regulation of land issues on the territory of the Nenets Autonomous Okrug" (29 December 2005), the NAO law N 416-OZ, "On subsoil resources" (2 June 2003), and the NAO law N 341-OZ, "On reindeer husbandry in the Nenets Autonomous Okrug" (15 March 2002).

According to Part 4 of Clause 17 of the NAO law N 341-OZ, "About reindeer husbandry in Nenets Autonomous Okrug" (15 March 2002), "… persons working in reindeer husbandry, their authorised representatives and representatives of the social organisation 'Association of Nenets People Yasavey' have the right to request ecological and ethnological impact assessments of activities potentially infringing the interests of reindeer husbandry and to participate in carrying out such impact assessments".

2. Territories of traditional land use and hydrocarbon exploitation

One of the means to protect the traditional way of life and primordial inhabitancy of the NSIPN is the establishment of Territories of Traditional Nature Use (TTNUs). Their definition, as well as the procedures for establishing and managing them, are regulated by the federal law N 49-FZ, "On Territories of Traditional Nature Use of indigenous numerically small peoples of the North, Siberia and the Far East of the Russian Federation" (7 May 2001; revised on 26 June 2007).

According to Clause 1 of this law, TTNUs are specially protected natural territories established for the NSIPN to practise traditional nature use and conduct a traditional way of life. According Clause 5, TTNUs can exist at a federal, regional or local level.

Clause 12 of the law defines how land, or specific natural resources on the land, can be withdrawn from a TTNU for state or municipal needs. The clause also defines the indemnification for losses to the NSIPN caused by such withdrawal.

As TTNUs are specially protected areas, a special legal regime is established within their boundaries. This includes a limitation on economic activities that conflict with the purpose of the establishment of an TTNU in the first place. The federal legislation does not contain an obvious interdiction against carrying out activities related to the exploration for, or the extraction and transportation of, hydrocarbon resources, but Clause 8 of the federal law "On subsoil resources" states that "the use of subsoil resources in specially protected territories should take place in accordance with the status of these territories". Thus, in cases where the regulations for a TTNU prohibit hydrocarbon-related activities within their borders, subsoil resources cannot be allocated for these purposes.

Procedures for establishing and managing TTNUs at a regional level within the NAO are regulated by "Regulations of Territories of Traditional Nature Use of numerically small indigenous peoples of the North in the Nenets Autonomous Okrug", approved through a decree of the NAO Administration on 29 December 2001, N 1025.

Besides this, a number of regulations contained in the NAO laws N 671-OZ, "On regulation of land issues on the territory of the Nenets Autonomous Okrug" (29 December 2005), and N 416-OZ, "On subsoil resources" (2 June 2003) also mention this issue.

Part 2 of Clause 28 of the NAO law "On regulation of land issues on the territory of the Nenets Autonomous Okrug" repeats the regulations of the federal law "On Territories of Traditional Nature Use". It also describes the procedures for land allocations and the use and protection of regional-level TTNUs, as well as how natural resources may be used within TTNUs and how their borders are established by the NAO Administration, in accordance with federal legislation, as well as other laws of the NAO.

Part 6 of Clause 29 of this law states that "withdrawal of the lands, or other termination of rights to the lands for needs contradicting their special-purpose designation within the limits of the specially protected natural territories, is not accepted". In this respect, this NAO law contradicts the above-mentioned Clause 12 of the federal law "On TTNUs", which provides an opportunity for such a withdrawal.

A number of TTNUs are currently established within the NAO through regulations approved by the NAO Administration in 2002. Among them are the regional-level TTNUs "im. Vyucheyskiy", "Erv", "Rassvet Severa", "Kolguev", "Druzhba narodov", "Krasnyy Oktyabr", "Voskhod", "Put Ilicha". All of these TTNUs have been created with the purposes of protecting the rights and interests of the NSIPN in the NAO, including the preservation of their culture, traditional way of life and traditional economic activities. But none of the relevant regulations precisely delineate what is forbidden within the borders of the TTNU.

Despite this, all the relevant laws do limit the possibilities of conducting hydrocarbon-related activity within the limits of TTNUs, in line with specially pro-

tected natural areas. It is therefore necessary to use TTNUs as the mechanism for the preservation of traditional lands for the use of the NSIPN in the NAO.

3. General legislative issues regarding mineral exploitation

Issues concerning the exploitation of subsoil resources, including extracting hydrocarbon resources, are regulated by the federal law "On subsoil resources". Besides this, more specific issues are in part regulated by the federal Land, Forest and Water Codes, as well as by the federal laws "On protection of the environment", "On ecological impact assessment" and a number of subordinate acts.

Subsoil resources within the borders of the Russian Federation, including the subsurface space and its mineral, energy and other resources, are subject to state ownership. Private or municipal ownership of subsoil resources is not approved.

There are also laws and subordinate acts at the regional level regulating the exploitation of subsoil resources, including the extraction of hydrocarbon resources. The NAO law "On subsoil resources" was passed in 2003; it was revised in 2005 and 2006.

Clause 35 of the federal law "On subsoil resources" defines as the primary goals of state regulation of the exploitation of subsoil resources the continuous reproduction of the mineral and raw material base, its rational use and the protection of subsoil resources in the interests of present and the future generations of the people of the federation.

According to Clause 6 of the federal law "On subsoil resources", subsoil resources are mineral occurrences that are investigated or extracted, including through waste mining and related processing methods. Non-extractive ways of using such resources – such as the construction of underground structures – also fall under this law.

Subsoil resources can simultaneously be allocated for geological studies and mineral extractions. Extraction can then be undertaken during or after the geological investigations.

II. Regulation of mineral exploitation and indigenous rights in the NAO during the allotment of exploitation sites

4. The process of allotment of exploitation sites

Clause 10.1. of the federal law "On subsoil resources" defines the the fundamental conditions of allotting subsoil resource sites to their users. These allocations are made by the supreme authorities of the Russian Federation and its administrative subunits. Depending on the subsoil resources in question, allotments are approved by the federal government or its administrative subunits. For the extraction of minerals from Russian waters or the continental shelf, the approval of the federal government is necessary. Geological investigations in Russian waters or the continental shelf are approved through the federal management bodies for subsoil resources. With respect to local-level subsoil resource sites and common, widespread minerals[59], the decision is approved by the government bodies of the administrative subunits of the federation.

The right to use subsoil resources is granted on the following preconditions:

- approval of a commission, created by the federal management bodies for state subsoil resources and including representatives of the relevant administrative subunit of the federation;
- the decision of the competition or auction commission granting use rights to subsoil resource sites for the purpose of exploring for and extracting minerals or, under a combined license, for the purposes of geological studies and the investigation and extraction of minerals, barring sites in Russian waters and on the continental shelf;
- the coming into force of a consortium agreement on division of production, concluded in accordance with the federal law "On consortium agreements on division of production".

Permission to use subsoil resources is specially sanctioned by the state by a license containing a form with the state emblem of the Russian Federation, as well as text, graphics and appendices. The appendices are an integral component, defining the basic conditions for using subsoil resources. Issuing licenses for the exploitation of subsoil resources is defined in Clause 11 of the federal law "On subsoil resources".

The license is the document certifying the right of its owner to use subsoil resource sites within certain borders according to the specified purpose, during a limited period of time stipulated by the owner in advance. Between representatives of the government bodies and the subsoil resource user a contract can be signed (although this is not obligatory), with a description of the conditions applying to the use of such sites and the obligations of the parties in this connection.

The license certifies the right to geological investigations of the subsoil resources, to develop the mineral deposits, to carry out waste mining and related processing, and other sorts of exploitation of subsoil resources that are not related to mineral extraction.

[59] This term refers to a list of common minerals and stones, defined by Russian law, which normally are used for building and construction purposes.

It is possible to receive one license covering several kinds of subsoil resource use.

The granting of the license is carried out at the consent of the land owner, the land user, or the tenant. Allottment of the land area is carried out according to a procedure regulated by federal legislation, after the project has been approved.

Licenses to exploit subsoil resources are granted through competitions or auctions, as legislatively defined in the "Regulations on the procedure of licensing for subsoil resource users" (Decision of the Supreme Court of the Russian Federation on 15 July 1992, N 3314-1, revised on 26 June 2007) and the "Instruction on the procedure of granting of concessions for development of gas and oil deposits" (ratified by the decision of *Gosgortekhnadzor* of the Russian Federation on 11 September 1996, N 35; revised on 13 July 2006).

Allocating subsoil resource sites proceeds as follows:

- Preliminary concession boundaries are defined.
- Announcement of an auction, or competition, which allocates sites for development, is published by a special authorised body in a federal, republican or regional press organ, an independent press organ, and a local press organ, not later than 3 months – for large objects not later than 6 months – prior to the date of the event.
- The enterprises submit applications.
- In the case of an auction, the applications undergo a preliminary examination (elimination). For competitions a preliminary expert examination is not conducted.
- After the application form for participation in a competition is accepted, the geological information package for the site of interest is given to the applying enterprise.
- On the basis of the geological information, the applying enterprise calculates the basic technical and economic parameters of the planned development.
- The auction or competition is carried out by a commission of experts, which renders a decision.
- The authorities render their decision on the basis of the decision of the expert commission of the auction or competition.
- A preliminary agreement is drafted. This outlines the recultivation and restoration of the tract of land in question. The land is allocated in accordance with the federal Land Code.
- A state ecological impact assessment of the license's supporting documents is carried out.
- The winner of the competition or auction is granted the license.
- Registration of the license by federal or regional geological resource management bodies (within a month from its receipt). The license comes into force after its registration.
- Authorities are obliged to publish publicly lists of all enterprises participating in competitions or auctions, a list of the enterprises which have received licenses, and the conditions on which licenses have been given. The information should be published not later than 30 days from the date of the decision on the competition or auction.
- The concession boundaries are specified.
- The resource exploitation project is outlined, other project documentation is developed.
- The project is carried out.

These procedures of resource exploitation in the NAO are regulated by the NAO law N 416-OZ, "On subsoil resources" (2 June 2003). According to a preamble of this law:

"The major task of the law is the establishment of relationships directed towards the rational exploitation of subsoil resources, nature protection norms and environmental safety, a combination of the exploitation of subsoil resources and the preservation of the traditional way of life of the indigenous peoples of the North".

The law regulates the procedure of allocating subsoil resource sites for exploitation, the exploitation itself, and the procedures for terminating the resource exploitation, defining details of the terms of the federal legislation. According to our investigations, Clause 35 of the law includes the following special duties of the license owner (subsoil resource user):

- to fulfill the conditions set out by the license and the license agreement (contract) with respect to production and other agreements (contracts) concluded on their basis, including agreements with Northern indigenous peoples;
- to respect the rights of indigenous people of the North with regard to the protection of their traditional lands, traditional way of life and occupations.

Thus, the law demands, among other obligations, the observance of the interests of the NSIPN during the exploitation of resources.

5.The process of allotting land for investigation, extraction and transportation of oil and gas; conditions and restrictions

According to item 4 of Clause 88 of the federal Land Code , paragraph "Industrial areas", land areas for mineral extraction are given to mining and hydrocarbon companies after registration of the concession

boundary and the statement on land recultivation and restoration subsequent to exploitation.

Thus, the obligation to restore and recultivate land damaged during hydrocarbon extraction is legislatively established.

Clause 29 of the federal Land Code stipulates that allotting state or municipally owned land to citizens and legal persons is carried out in accordance with government agencies or local self-government bodies that possess the allotment rights.

Extracting subsoil resources presumes the construction of various structures. The federal Land Code regulates the allocation of the sites for constructions. Part 3 of Clause 31 of the federal Land Code states:

> "When allotting land in places of indigenous peoples' traditional nature use and economic activities … for purposes not connected with their traditional economic activities and crafts, one should organise meetings and public referenda concerning withdrawal of – and compensation for – the sites for … the construction of structures which infringe the interests of the specified peoples and communities.
>
> The executive government or local government bodies assigned by Clause 29 of the Land Code are responsible for the preliminary coordination in locating the structures in accordance with the results of such meetings or referenda."

The procedures for carrying out such referenda and meetings are regulated by special federal and regional legislation.

The specifics of allotting sites for constructions and where installations shall be located in connection with subsoil resources extraction are regulated by the NAO law N 671-OZ, "On regulation of land issues on the territory of the Nenets Autonomous Okrug" (29 December 2005).

This law establishes the following procedures for allotting sites for constructions and work connected with subsoil resource use.

Clauses 19 and 21 state that for the allotment of land for constructions, locating of structures and work connected with subsoil resource extraction, and for prospecting in state lands of the NAO, it is necessary to present:

- an approved plan for the recultivation of the land;
- the consent of the main land user (tenant), and in the case of legal necessity, the consent of the representatives of the NSIPN or ethnic communities, including clan communities, for the withdrawal of the land.

Part 3 of Clause 21 of the law relates to the decision of the Administration of the NAO on allotting land for carrying out prospecting, including the duties of the tenant to re-establish the land conditions in a way suitable for their assigned use, to perform necessary recultivation, and other conditions stipulated by the current legislation.

For carrying out prospecting, sites are leased for a term not exceeding one year.

Clause 22 of the law also establishes restrictions and an interdiction on allotting sites for structures and installations and work related to the exploitation of subsoil resources. The sites are not allotted in case in which their planned use directly threatens the environmental safety of the population or the land, or the traditional lifeways and economic activities of the NSIPN.

Clause 29 of the law states the general rules of allotments and use of land in places of traditional nature use and economic activities of the NSIPN. These are the main provisions:

- the regulation of use and protection of the land in places of traditional nature use and economic activities of the NSIPN is differentiated according to a zoning of territories, and should be compatible with the customs of the people in question and not impede their activities;
- in places of traditional nature use and economic activities of the NSIPN in the NAO a special legal regime of land use can be established;
- when allotting land in places of traditional nature use and economic activities of the NSIPN for purposes not related to their traditional economic activities and crafts, the opinion of these peoples is to come to light through public referenda concerning the withdrawal of the land for state or municipal needs and the construction of structures which infringe the interests of the mentioned peoples and communities;
- conditions for allotting land in places of traditional nature use and economic activities of the NSIPN should provide compensations for all losses caused by the withdrawal of these areas. The size of the specified losses is defined by an agreement between the parties and is calculated according to regulations established in the current legislation;
- when allotting ground areas in places of traditional nature use and economic activities of the NSIPN, an agreement can be entered between land owners, tenants, land users, and persons to whom the sites are allotted, or in favour of which the user rights are restricted, about indemnification for losses connected with damage, pollution, unauthorised use, or other infringement of the rights of the peoples and communities in question. The size of the compensation is defined in the agreement.

Thus, the legislation of the Russian Federation and the NAO requires that the allotment of land for purposes not connected with conducting a traditional way of life are coordinated with the NSIPN. Legisla-

tion also delineates the necessary conditions concerning compensations and indemnifications for the resulting losses to the NSIPN.

6. Problems concerning state assessment

State Environmental Assessment (SEA)

The basic mechanism of environmental protection which was used in Russia until 1 January 2007 was the State Environmental Assessment. Practically of all kinds of economic activities were subject to the State Environmental Assessment (SEA).

Since 1 January 2007, after a modification of the federal law N 232-FZ, "On modification of the Town-planning Code of the Russian Federation and separate acts of the Russian Federation" (18 December 2006; revised on 8 November and 4 December 2007), the role of the SEA is considerably reduced.

Before the law came into force, environmental assessment included "an establishment of the conformity of the planned economic and other activity with environmental requirements and a definition of the admissibility of the realisation of the object of the environmental assessment, with an outlook on the prevention of possible adverse influences of this activity on the surrounding environment and the social, economic and other consequences of the realisation of the object of the environmental assessment". (*Editor's note:* In other words, environmental assessment included consideration of whether the proposed development would have negative social and economic impacts.)

From 1 January 2007 this was restated as "an establishment of the conformity of the documents and/or the documentation proving that the planned object of the environmental assessment of economic and other activity, with the environmental requirements established by technical regulations and the legislation in the field of environmental protection, with an outlook on the prevention of negative influences of such activity on the environment".

When comparing these definitions some major main differences can be seen. First, the subject of the assessment since 1 January 2007 is not the poposed economic activity, but the documents and the documentation. Second, all social, economic and other consequences of the poposed economic activity disappear from the purposes of the assessment. Third, and this is most important, as of 1 January 2007, it is a requirement that technical regulations coincide with the environmental requirements. As of today, there are no technical regulations regarding the maintenance of environmental safety. One more difference is that after 1 January 2007 the environmental assessment does not make a recommendation about whether the proposed economic activity should be permitted, but instead merely determines whether it conforms with the environmental requirements.

The law has brought changes into a significant number of federal laws, including "On environmental assessment", "On protection of the environment", "On the protection of Lake Baikal", "On an exclusive economic zone", "On fauna", "On protection of population and territories against extreme situations of natural and technogenic character" (hereunder project documentation for nuclear energy use) and a number of others.

Requirement for carrying out SEAs were removed from all these laws, replaced by a State Assessment of the Project Documentation (SAPD), provided by the Town-planning Code.

Despite these changes, licenses to utilise subsoil resources are still subject to SEA. Clauses 11 and 12 of the federal law "On environmental assessment" state that licenses for activities which can affect the environment are subject to both federal- and regional-level the SEAs**.**

Clause 14 contains a list of necessary conditions for carrying out the SEA. One such condition is an estimate of the impact on the environment, as well as documentation of discussions with the public and public organisations (associations) organised by local government institutions.

Thus, a SEA should precede the granting of a licence for the development of oil and gas projects. Representatives of the NSIPN have the opportunity to participate in the Estimation of Environmental Impact (EEI) as well as directly in the SEA.

State Assessment of the Project Documentation (SAPD)

As a result of changes in the federal Town-planning Code which came into force on 1 January 2007, oil and gas projects are subject to state assessment. Clause 49 defines the the objective of the State Assessment of the Project Documentation (SAPD) and the technical investigations: an assessment of whether the project documentation conforms with the requirements of the technical regulations, including sanitary, epidemiological and environmental requirements, requirements of cultural heritage protection, requirements of fire, industrial, nuclear, radiation and other safety issues.

As noted above, technical regulations in the field of environmental protection are absent. It is thus quite possible that the environmental assessment will not be carried out at all.

It is also necessary to note that in Clause 48, Item 12 of the Town-planning Code, in the framework of project documentation for the state assessment, the Estimation of Environmental Impact (EEI) is not mentioned. There is only a list of measures concerning the protection of the environment, with no details about

the measures themselves. At the same time, Item 2 of Clause 32 about the compulsion of carrying out an EEI in view of alternative variants and with obligatory participation of the public is excluded from the federal law "On protection of the environment".

From all this can be concluded that, after exclusion of these objectives from the (former) SEA, the process of EEI may not be carried out at all.

Ethnological assessment

The concept of ethnological assessment is introduced by Clause 1 of the federal law N 82-FZ, "On guarantees of the rights of numerically small indigenous peoples of the Russian Federation" (30 April 1999). According to Item 6 of the clause, "ethnological assessment is a scientific investigation of the influence of changes of the primordial inhabitancy of numerically small indigenous people and the welfare … of an ethnic group".

According to Clause 8, Part 6, the NSIPN have the right "to participate in the work on environmental and ethnological assessments during the process of developing federal and regional programmes for natural resources development and protection of the environment in places of traditional nature use and economic activities of indigenous peoples".

Except for these positions, the Russian legislation contains no references to regulation of the process of ethnological assessments and their status.

Despite this, experiences of carrying out ethnological assessments of oil and gas projects exist from the Yamal-Nenets Autonomous Okrug and Sakhalin Oblast.

Clause 17, Part 4, of the NAO law N 341-OZ, "On reindeer husbandry in the Nenets Autonomous Okrug" (15 March 2002) states that "persons engaged in reindeer husbandry, their authorised representatives and representatives of the … Association of Nenets People 'Yasavey' have the right to put forward proposals on carrying out environmental and ethnological assessments of economic and other activity infringing the interests of reindeer husbandry, and to participate in carrying out these assessments".

In spite of the fact that regulations for ethnological assessments are not clear, the NSIPN of the NAO and their authorised representatives can demand that such assessments are carried out, when planned oil development projects infringe their interests.

7. Opportunities for participation of representatives of the NSIPN in making decisions infringing their interests

Based on the above analysis, it is possible to draw the conclusion that participation of the NSIPN in decision-making regarding the carrying out of hydrocarbon projects is possible at the following stages:

1) At the stage of allocation of the land by referenda, meetings and coordination with representatives of the NSIPN

Legislation stating these rights:

- Clause 31, Item 4, of the federal Land Code;
- Clauses 19, 21, 29 of the NAO laws N 671-OZ, "On regulation of land issues on the territory of the Nenets Autonomous Okrug" (29 December 2005)

2) At the stage of the Estimation of Environmental Impact (EEI)

As the substantiation of a license is a matter of a SEA, and as carrying out an EEI is obligatory according to the current legislation, participation of the public should take place as stated in the "Position on estimation of environmental impact of planned economic and other activity in the Russian Federation", approved by Order N 372 of the State Environmental Authority (*Goskomekologiya)* of the Russian Federation (16 May 2000; hereafter called the Position).

This Position defines the main principles of carrying out an EEI, which include: the principle of presumption of potential harm of any proposed economic activity; compulsion of carrying out an EEI at all stages of preparing the documentation of this activity; compulsion of consideration of alternative variants; the principle of public participation in preparation and working at an EEI at all stages, and others (section II).

Section IV of the Position describes in detail the procedure of informing the public and participation from the public during the EEI that enables the NSIPN to realise the rights. The EEI in our country is a unique mechanism of public participation in environmentally significant decisions. It includes:

- the duty to inform the public at all stages of the EEI and to consider their proposals, notes and comments;
- public discussions of planned activity, including public hearings;
- an opportunity to present notes, proposals and comments regarding the proposed development at all stages of the public discussion.

3) At the stage of the Public Environmental Assessment (PEA)

The process of carrying out a PEA is regulated by Clauses 20-25 of the federal law "On environmental assessment". Main provisions of these clauses are:

- A Public Environmental Assessment (PEA) is organised and carried out under the initiative of citizens and public organisations (associations), and also under the initiative of local self-government bodies by public organisations (associations), the charters of which include work

on the protection of the environment, including the organisation and carrying out of environmental assessments. Public organisations must be registered according to the federal legislation (Clause 20);

- A PEA is carried out with respect to the same proposed development projects as the subsequent or simultaneous SEA (Clauses 21, 22);
- the public organisations (associations) which are carrying out a PEA have the right (Clause 22):
- to receive documentation regarding the proposal from the applicant, in the same form as given to the SEA;
- to participate as observers in sessions of expert commissions of the SEA and to participate in concluding discussions and public discussions under the PEA carried out by them;
- PEA (Clause 23) is carried out after its registration in local government institutions;
- the number of reasons for possible refusal in registering a PEA is limited (Clause 24);
- the conclusion of the PEA is reported to the federal executive authority which is carrying out the SEA, to the applicant preparing the documentation which is subject to PEA, to the bodies which decide whether the proposed project can be carried out and to the local self-government bodies; it can also be handed over to other interested persons (Clause 25);
- the conclusion of PEA becomes valid after it has been stated by the federal executive authority in the field of environmental assessment or by a government institution of an administrative subunit of the Russian Federation (Clause 25).

4) At the stage of the State Environmental Assessment (SEA)

According to Clause 19 of the federal law "On environmental assessment", citizens and public organisations (associations) have the right

- to propose that PEAs of economic and other activities that infringe on the environmental interests of the inhabitants of a given territory be carried out, in accordance with current federal law;
- to write to federal and regional authorities with their suggestions about the environmental aspects of planned economic and other activities;
- to be informed about assessment results by federal and regional authorities that are carrying out SEAs of specific prospective developments;
- to carry out other actions relating to environmental assessment that are not prohibited by federal legislation.
- The assessment conclusions prepared by a SEA expert commission, and the decision as to whether the proposed project can be permitted, should take into consideration all the material submitted to the commission and it should thereby reflect public opinion.

III. Indigenous rights and duties of the hydrocarbon industry

8. Issues of environmental protection during hydrocarbon exploration and exploitation

Preservation of the environment is a requirement for hydrocarbon projects. As the traditional way of life of the NSIPN is closely connected with the condition of the environment, the right to a favourable environment is stated in Clause 42 of the federal Constitution.

Issues concerning the preservation of the environment are determined in the federal Constitution, federal laws and other statutory acts.

Clause 4 of the federal law, N 7-FZ, "On preservation of the environment" (10 January 2002), specifies objects of special protection as well as sites included in the World Heritage List, state nature reserves, national parks, and areas of primordial inhabitancy and traditional nature use by the NSIPN.

Excerpts of the basic legislation concerning environmental protection and natural resources in the contect of hydrocarbon prospecting and exploitation follow.

General issues of environmental protection in the context of exploration for and extraction of subsoil resources:

The federal law N 7-FZ, "On preservation of the environment" (10 January 2002)

Clause 34. General requirements of environmental protection in the context of locating, designing, constructing, reconstructing, commissioning, operation, preservation and liquidation of buildings, structures, installations and other objects:

1. Locating, designing, constructing, reconstructing, commissioning, operation, preservation and liquidation of buildings, structures, constructions and other objects rendering direct or indirect negative influence on the environment are to be carried out according to requirements of environmental protection. Actions should be taken to secure environmental protection and restoration, rational use and reproduction of natural resources, and maintenance of environmental safety.
2. Breaching the requirements of environmental protection entails a stop by court order of locat-

ing, designing, constructing, reconstructing, commissioning, operation, preservation and liquidation of buildings, structures, installations and other objects.

3. Complete termination of locating, designing, constructing, reconstructing, commissioning, operation, preservation and liquidation of buildings, structures, installations and other objects that breach requirements of environmental protection takes place on the basis of a decision by court and/or tribunal.

Clause 51. Requirements of environmental protection relating to industrial waste

1. Industrial waste, including radioactive waste, must be collected, neutralised, transported, stored and/or disposed of using environmentally sound methods as defined by federal legislation .
2. These actions are prohibited:

- dumping industrial waste, including radioactive waste, in surface or underground water reservoirs, in water catchment areas, in the subsoil and on the ground;
- deposition of radioactive or other dangerous waste near cities or rural settlements, in forests and parks, resorts, health-improvement or recreational zones, on animal migration routes, close to spawning areas and elsewhere where the waste constitutes a danger to the environment, ecosystem or human health;
- burying radioactive or other dangerous waste in water catchment areas for underground water reservoirs used as sources of water supply or for hydrotherapeutic purposes, or for the extraction of valuable subsoil resources;
- importing radioactive or other dangerous waste into the Russian Federation with the purpose of their deposition or neutralisation.

3. Regulations concerning waste, including dangerous waste and radioactive waste, are regulated by the federal legislation.

The decision of the State Mining Directorate (Gosgortekhnadzor) of the Russian Federation of 6 June 2003, N 71, "On the statement of 'Rules of protection of subsoil resources'"

1. During the exploitation of subsoil resources, safety of life and health of the population, protection of buildings and constructions, air, ground, forests, water, fauna and other elements of the environment shall be ensured.
2. During the exploitation of subsoil resources, environmental conditions and nature protection measures shall be checked regularly. If deemed necessary, the application of more effective environmental protection measures will be required.
3. Land destroyed through mining shall, after the cessation of the work, be brought into a suitable condition for further use. When work results in the destruction of the soil cover, the fertile ground layer shall be removed, stored and used on recultivated or unproductive land.
4. During the extraction of mineral deposits, actions to prevent water and wind erosion, salting, bogging or other sorts of soil degradation shall be carried out.
5. During the exploitation of surface and ground water, the water needs of the population for drinking and household uses,and the protection of water from exhaustion or pollution, including from sewage, shall have priority.
6. Within the boundaries of the concession, hydrogeological surveys and checks of the ground and surface water conditions shall be undertaken.
7. The allocation in settlements of dumps of … and waste deposits, being a source of air pollution by dust, harmful gases, evil-smelling substances, ….

Duties of the user of subsoil resources concerning environmental protection

Clause 22 of the federal law N 2395-I, "On subsoil resources" (21 February 1992), states the duties of subsoil resource users, including preservation of the environment.

Clause 16 of the NAO law, "On exploitation of subsoil resources … " establishes the following duties of subsoil resource users. The user of subsoil resources is obliged to observe:

1) legal requirements regarding conducting work connected with the exploitation of subsoil resources and the primary processing of minerals;
2) the requirements of technical projects, plans and schemes of mining development,

…

7) regulations concerning the protection of subsoil resources, air, ground, forests, water, buildings and other structures from negative impacts resulting from the exploitation of subsoil resources;
8) that land sites and other natural elements degraded during the exploitation of subsoil resources shall be restored to a suitable condition for their further use;

…

10) the specific conditions established by the licence or the agreement for the project, and the timely delivery of correct payments.

…

x) the requirements of federal and NAO legislation regarding environmental protection.

Users of subsoil resources or other legal and physical persons involved in the exploitation of subsoil resources must have special qualification and experience, confirmed by a state license (certificate, diploma) to carry out such activities: geological prospecting, search, investigation, various methods of mineral extraction, construction and operation of underground structures, and other relevant activities.

Two federal orders, one of 21 August 2000, N 613, "On urgent measures for prevention and removal of spills of oil and oil products" (revised on 15 April 2002) and the other of 15 April 2002, N 240, "On the order of the organisation of actions under the prevention and removal of oil spills of and oil products in the territory of the Russian Federation" establish duties for enterprises that extract and transport oil regarding the preparation and performance of emergency plans. In the context of current developments in oil extraction in the NAO it is urgent that the necessary regulations delineating the order's implementation are approved so that these orders can go into effect.

In the NAO, the "Regulations of the organisation of actions under the prevention and removal of oil spills and oil products in the territory of Nenets Autonomous Okrug", approved by the NAO administrative resolution of 24 October 2002, N 595, also applies. This also describes the duties of users of subsoil resources in this sphere.

Protection of water resources

The Water Code of the Russian Federation
Clause 52. Use of water for investigation and extraction of minerals.

1) Use of water for investigation and extraction of minerals shall be carried out according to the present Code and the legislation on subsoil resources.

Clause 55. Basic requirements for protection of water
…

2) When using water resources, physical or legal persons are obliged to carry out measures to ensure an adequate supply for household use among the local inhabitants and protection of water resources according to the present Code and other federal laws.

Protection of woods and forest plots

State- or municipally-owned forest plots can be leased for geological studies of subsoil resources and for the extraction of mineral deposits.

Geological studies of subsoil resources in forests controlled by the Federal Forest Service without allocation of a forest plot is permitted on the basis of sanctions by federal and local governments, as long as such work does not entail the felling of forest plantings.

The Forest Code of the Russian Federation
Clause 21. Construction, reconstruction and operation of structures which are not part of the forest infrastructure.

1) Construction, reconstruction and operation of objects, which are not part of the forest infrastructure, on the "Forest Fund" are permitted for:
   - geological studies of subsoil resources;
   - development of mineral deposits.

Clause 25. Types of forest use
…
- geological studies of subsoil resources, extraction of mineral deposits.

Clause 43. Use of forests for geological studies of subsoil resources and for extraction of mineral deposits.

1. Use of forests for geological studies of subsoil resources and the extraction of mineral deposits can only be carried out in accordance with Clause 21 of the Land Code.
2. State- or municipally-owned forest plots are leased for geological studies of subsoil resources and the extraction of mineral deposits, except in the cases stipulated by Part 3 of the present clause.
3. On the basis of federal or local government sanctions, geological surveys of subsoil resources in forests controlled by the Federal Forest Service is permitted without allocation of a forest plot, as long such work does not entail the felling of forest plantings.
4. Regulation of the use of forests for geological studies of subsoil resources and for the extraction of mineral deposits is established by the authorised federal authority.

9. Compensation for damage to the traditional way of life and Territories of Traditional Nature Use as a result of hydrocarbon investigations, extraction and transportation

As stated above, according to Clause 8 of the federal law N 82-FZ, "On guarantees of the rights of numerically small indigenous peoples of the Russian Federation" (30 April 1999), NSIPN have the right to compensation for damage caused to their living space by economic activities of organisations of all forms of ownership or physical persons.

Similarly, Clause 29 of the NAO law N 671-OZ, "On regulation of land issues on the territory of the Nenets Autonomous Okrug" (29 December 2005), states that:

- conditions for the allotment of land in places of traditional nature use and economic activities

of the NSIPN should provide compensation for all losses caused by the withdrawal of these areas. The size of the losses is defined by an agreement between the parties and is calculated as delineated in the current legislation;

- when allotting land in places of traditional nature use and economic activities of the NSIPN, an agreement can be entered between land owners, tenants, land users, and persons to whom the land is allotted, or in favour of which the user rights are restricted, about indemnification for the losses connected with damage, pollution, unauthorised use, or other infringement of the rights of the NSIPN. The size of indemnification is defined under the agreement of the parties.

Thus, both federal and regional legislation state the right of the NSIPN in the NAO to receive compensation for the damage rendered by hydrocarbon exploitation to their traditional nature use and a traditional way of life. The procedure of payment and calculations of the sum of the damage which is subject to compensation is defined under the agreement between the parties.

The legislation of the NAO demands agreements between users of subsoil resources and representatives of NSIPN at a stage of development of the project. The advantage of this requirement is the fact that the law guarantees a compensation of damage to the NSIPN; the disadvantage is the fact that the real impact on the Territories of Traditional Nature Use and the traditional way of life can be much larger than paid off under the agreement.

If the parties disagree about the size of indemnifications for damage that has occurred, they have the right to bring the case to court.

Clauses 77-79 of the federal law "On preservation of the environment", which states the duty of full indemnification for damage to the environment, as well as regulations regarding the payment, can be used to calculate compensation for damages that have occurred.

According to Clause 78, calculating the size of the environmental damage caused by breaching environmental protection legislation is grounded in the costs of restoring and recultivating the degraded environment and carrying out whatever reconstruction work as may be required.

At the federal level, a number of methods to estimate damage are approved:

- the method of damage estimation from the destruction of fauna and the infringement of its life space, approved by the State Environmental Authority (*Goskomekologiya*) of the Russian Federation on 28 April 2000;
- methods from the assessment of, and the compensation for, damage to the environment as a result of environmental law infringement, approved by the State Environmental Authority (*Goskomekologiya)* on 6 September 1999.

A number of legal documents are recommended to use for estimation and compensation of damage as a result of environmental law infringement, approved by decree of the State Environmental Authority (*Goskomekologiya*) on 23 July and other documents.

At the NAO level, the regulation N 23, "Rates for calculating the size of compensation for damage caused by legal and physical persons through illegal hunting, gathering, preparation or destruction of objects belonging to the Red List of endangered species of the NAO, as well as the destruction and degradation of their living space" (26 January 2005).

Unfortunately, to our knowledge, these calculation methods do not match the real size of the caused damage and losses, nor the actual costs of restoration of the natural condition of the environment.

IV. Termination of mineral exploitation and liability for infringement of legislation

10. Basis for termination of exploitation rights

Infringements of license conditions and systematic infringement of instructions form a basis for the termination of exploitation rights**.** If the resource user does not comply to obligatory reporting, as demanded by the legislation, a prescheduled termination of the granted rights is possible. This is in accordance with Clause 21 of the federal law "On subsoil resources" and Part of 3 Clause 16 of the NAO law "On exploitation of subsoil resources".

Liquidation and continuation of the enterprises

After the exploitation of minerals, after the expiration of the licence, or after the prescheduled termination of exploitation rights, the enterprise either is liquidated or continued.

11. Responsibilities concerning infringement of mineral legislation

Administrative liability

Clauses 7.3., 7.4., 7.10., 7.14. and 7.16 of the Code on Administrative Offences (CoAO) state the responsibility in the form of monetary penalties for the following offences:

Clause 7.3. CoAO - for exploiting subsoil resources without permission (license) or breaching the conditions stipulated by the permission (license);

Clause 7.4. CoAO - for building in mineral exploitation areas without special permission, or for not following the requirements regarding building and construction safety;
Clause 7.10. CoAO - for giving user rights for ground, subsoil resources, forest plots or water objects, or exchanging grounds or subsoil resource sites, forest plots or water resources;
Clause 7.14. CoAO - for carrying out earth, construction or other works without the permission of the state authority for cultural heritage protection;
Clause 7.16. CoAO - for illegal alienation of grounds on specially protected historical or cultural heritage lands.

The maximum penalty for infringement of the clauses of the CoAO amounts to:

citizens: 2 000 RUB
officials: 5 000 RUB
legal persons: 40 000 RUB

The criminal liability

The Penal Code of the Russian Federation (UK RF) stipulates the responsibility for infringement of safety regulations for mining, construction and other works (Clause 216 of the Penal Code), for breaching regulations of protection and exploitation of subsoil resources during planning, allocation, construction, commissioning and operation of mining enterprises or underground constructions which are not connected with the extraction of minerals, and also for arbitrarily building in mineral exploitation areas (Clause 255 of the Penal Code).

A-3. The GIS database

A-3.1. The Geographical Information System (GIS)

A-3.1.1. Introduction

This project had two distinct phases, each required a unique Geographical Information Systems (GIS) appplication. The first was the developmental phase, where the main purpose was to combine as much as available information, from various sources, and store it into one logical, spatially enabled database. This was done by the Norwegian Polar Institute where necessary tools were easily available.

The developmental phase will be succeeded by the production phase under the control of the Association of Nenets People of Yasavey. During this phase it is important that the data can be accessed freely by various users and the public through an internet connection and without special requirements to software, platform or technical resources. The required functionality includes data access, basic editing and update possibilities.

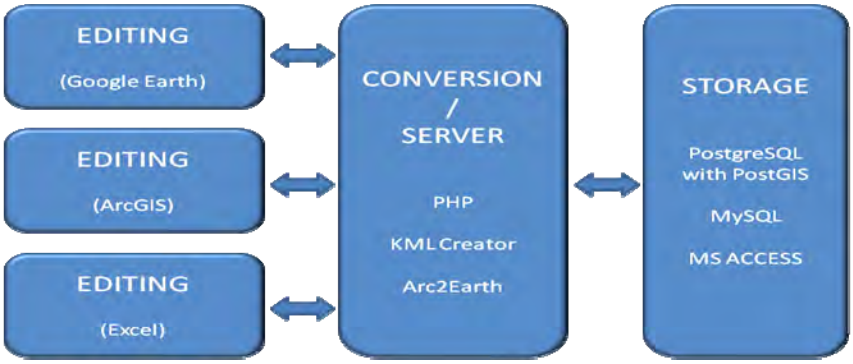

Figure A3-1: *Development architecture*

A-3.1.2. Development phase

During the project most of the GIS related work was done using tools available at the Norwegian Polar Institute. For combining spatial data from various sources we used mainly software from the ESRI suite (ArcGIS, see www.esri.com). During production we also needed conversions from and to 'Keyhole Markup Language' (KML, see www.opengeospatial.org/standards/kml), as the Google Earth (GE, see www.earth.google.com) virtual globe browser was an important data source. Since the last three years saw a rapid development in both ArcGIS and KML, we needed to change our production environment several of times.

In the early days of the project we came up with a production line based on a central spatial database (we selected PostgreSQL with PostGIS spatial extension, see www.postgis.refractions.net). All the incoming data was processed and imported into the spatial database. We then built a server layer on top of this that responds to http requests and returns KML to a client running Google Earth, for example (see Figure A3-1). This architecture was based on the situation that arose in 2006 where we needed to implement additional functionality that was not covered by KML.

By the end of 2007 we implemented a first version based on this original architecture. We made some minor changes to the original concept. We changed the database to MySQL (with basic spatial functionality added, see www.mysql.com) as it was already installed on the server of the company hosting Yasavey's website. This will facilitate future transition to the production phase under the control of Yasavey..

Another important development was that KML was in the process of being accepted as a standard for exchange of spatial data by the Open Geospatial Consortium (OGC, see www.opengeospatial.org), supporting our goal of making the data as open as possible for various geo-browsers.

Much time was spent developing the server functionality. We chose to apply PHP (see www.php.net) as this is the most widely used language in combination with MySQL for web applications. It has excellent support and documentation and can be implemented on any major hosting service. A first test run of available data proved successful. This entire production cycle took roughly 3 months, most of which went to development of the PHP service layer.

The acceptance of KML as an OGC standard triggered a lot of community activity. Several KML developer libraries emerged, rapidly speeding up the development time for the PHP service layer. This addressed a key issue we encountered: the fast development of KML. As KML was rapidly introducing new possibilities and reducing the need for overhead processing, we needed to change the service layer accordingly. By replacing the PHP service layer, by community driven libraries or low cost commercial solutions, we

could reduce the maintenance and complexity significantly.

By mid 2009, we found that the KML Creator (see www.kmlcreator.leprado.com) was mature enough to be implemented in our PHP service layer. A prototype was developed and tested. Production time was not significantly reduced, but maintenance of the code was now an autonomous process and need not burden Yasavey in the production phase.

Another product we used was Arc2Earth (see www.arc2earth.com). It had been around for a couple of years, but did not give us the needed functionality until the second half of 2009. Using Arc2Earth we were able to cut significantly on production time and reduce post-processing (for example adding URL's to the PDF documents). Then, by the end of the project in late 2009, Arc2Earth was able to replace the need for most of the middleware. Therefore we opted to use ESRI's personal geodatabase (see webhelp.esri.com/arcgisdesktop/9.3/index.cfm?TopicName=Types_of_geodatabases) to store data. This stores all the data in one single Microsoft Access file (.mdb file, see www.office.microsoft.com/en-gb/access/default.aspx) and use Arc2Earth to convert to and from KML .

The final phase of the development was to add the Russian translation to the English data. ArcGIS can only handle multiple character sets using geodatabases. So here again we used ESRI's personal geodatabase and used MS Access to add the translated data. This process was however not without problems as two character sets in one database resulted in a number of errors and needed much post processing to address individual errors.

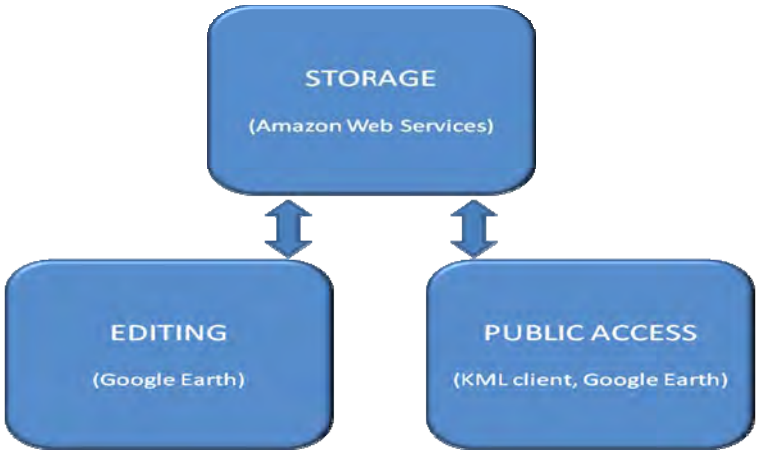

Figure A3-2: *Production architecture*

A-3.1.3. Production phase

The production phase differs significantly from the developmental phase. The main body of the data is available. It will need some maintenance (add new data, update old entries) but not as extensive as during the first phase. Thus, the emphasis is not on combining lots of different data, but on making a large body of unified data available to the general public. It is required that this can be done with a minimum of resources (in terms of cost, know how, hardware, software) but still be robust and provide good performance. The system must be easy to run and support should be widely available.

If we want to give access to the data to everybody with an internet connection, we have to presume average bandwidth, hardware or software. Here is where Google Earth can be used to our advantage to bring GIS to the general public. There are other geobrowsers available (Nasa World Wind, Bing maps, ArcGIS Explorer, to name a few), but with more than 40 million GE users the choice was obvious. The previous mentioned acceptance of KML as an OGC standard ensures that the data can be used in a wide variety of applications.

In order to give the user access to the latest version of the data, we applied a KML feature called *network links* where each time the latest data is downloaded from a server. However as our dataset is over 30 Mb large (around 4 Mb when zipped to KMZ) a user might experience quit slow response times. Storing the data at a single server would increase the risk for downtime. A server also requires regular maintenance by a person with a specialized knowledge.

But also here we were helped much by recent technological development. In the past serving large amounts of data fast and worldwide required considerable resources. Since *cloud computing* (read *online computing,* see www.en.wikipedia.org/wiki/-Cloud_computing) and storage has become available for the masses, a lot of our initial problems were solved. We currently have access to virtually unlimited storage and bandwidth for very low costs. For the present project we chose Amazon Web Services (AWS, see www.aws.amazon.com) as it provides good support and a user friendly format.

Thus, the architecture for the production phase can be kept very simple, see Figure A3-2.

This simple production architecture still allows for basic editing. Though the full flexibility and functionality of a

geodatabase is not available, all the editing features of GE can be used to update or add new data. As KML can be changed using text editors, some more advanced functionality can be achieved (for example "search and replace").

This simple architecture uses freely available software (GE, or any other KML client) and widely supported low-cost online storage. The flexible bandwidth and storage capacity eliminates the need for scaling. The performance makes it possible for users to download large amounts of data fast. By outsourcing the data storage to Amazon Web Services the system becomes very robust without the need for technical support. The communication between the parts is only in KML (or the compressed version KMZ) eliminating the need for conversions and therefore upgrades of middleware.

Information about how to access the database will be provided on the project website http://npolar.no/ipy-nenets and Yasavey's website http://www.yasavey.org.

A-3.2. Description of datasets

Due to the technical properties of the database, all information is represented by areas, lines and points. Consequently, each set of data consists of either areas (in technical language: polygons), lines or points.

For some kinds of data, the choice is natural: for instance, traditional nature use territories are shown by areas, reindeer migration routes are shown by lines, and slaughtering places are shown by points. For other kinds of data, there are two options. For instance, fishing sites were drawn as larger areas by some respondents, whereas others indicated only points on the map. We have not changed this information; consequently, fishing sites occur both as coloured areas and as points with a certain symbol both in the database and on the printed maps. In the digital database, two layers must then be switched on to see all the information about fishing sites.

The topographic elements on the printed maps do not form part of the database, which is placed on the satellite imagery of GoogleEarth. Coastline, rivers and lakes on the printed maps as well as the elevation contours on map O-1 are applied from the Digital Chart of the Earth 1:1 million.

Using the datasets based on satellite image interpretation, it is important to keep in mind that images are from various years, so that the resulting maps do not represent a coeval status for the entire NAO.

Box 12:
Overview of datasets

Category	No.	Dataset	Technical designation	Topology
infrastructure	1	settlements	settlements	point
	2	abandoned settlements	settlements_abandoned	point
	3	airports	airports	point
	4	roads and tracks (published maps)	roads_old	line
	5	roads and tracks (satellite images)	roads_and_tracks	line
	6	various places	various_places	point
	7	impact areas	impact_areas	polygon
industrial activities	8	pipelines	pipelines	line
	9	industrial large-scale facilities	industrial_places	point
	10	oil facilities	oil_installations	point
subsoil resources	11	hydrocarbons	oilfields	polygon
	12	coal	georesources_nonmetallic	point
	13	non-metallic	georesources_ metallic	point
	14	metallic	georesources_ coal	point
traditional activities	15	land use places	trad_landuse_areas	polygon
	16	land use areas	trad_landuse_routes	line
	17	migration routes	trad_landuse_places	point
territories	18	license areas	license_areas	polygon
	19	protected areas	protected_areas	polygon
	20	traditional land use cooperations	trad_occupations_coop	polygon

Dataset No. 1: Settlements
Point data, 44 map elements (status: 2009)
Technical designation: settlements

Settlements comprise all populated places with registered citizens. Their locations are based on published maps. Their exact position is in most cases verified on satetellite images, with the exception of some very small settlements in areas without high-resolution satellite image coverage. Working settlements and unpopulated (abandoned) villages are not contained in this dataset, but in datasets No. 2 and No. 9.

Attribute	Explanation
name	name of settlement
type_code	code number for type of settlement (see below)
type_description	type of settlement, in Russian (see below)
type_description_trans	type of settlement, description (see below)
indigenous_description	indigenous compared to Russian or other population
year_established	year or period when settlement was established
population_range	population size order, to define symbol used on map
population_2005	population in 2005 if known
population 1999	population in 1999 if known
nenets_population_1999	Nenets population i 1999 if known
population_remarks	remarks concerning population and type of inhabitants
registered_cooperatives	traditional landuse cooperatives registered in this settlement
reindeer_husbandry	reindeer husbandry: yes, no or not reported (not indicated if insignificant)
fishing	fishing: yes, no or not reported (not indicated if insignificant)
hunting	hunting: yes, no or not reported (not indicated if insignificant)
marine_mammal_hunting	marine mammal hunting: yes, no or not reported (not indicated if insignificant)
cattle_husbandry	cattle husbandry: yes, no or not reported (not indicated if insignificant)
cattle_husbandry_private	private cattle husbandry: yes, no or not reported (not indicated if insignificant)
sheep_husbandry	sheep husbandry: yes, no or not reported (not indicated if insignificant)
horse_husbandry	horse breeding: yes, no or not reported (not indicated if insignificant)
fur_farm	fur farming: yes, no or not reported (not indicated if insignificant)
potato_gardening	potato gardening: yes, no or not reported (not indicated if insignificant)
vegetable_gardening	vegetable gardening: yes, no or not reported (not indicated if insignificant)
remarks_trad_occupations	remarks concerning traditional modes of livelihood
air_transp	air transportation: yes, no
marine_port	marine port: yes, no
communal_service	community services: yes, no or not reported
kindergarten	kindergarten: yes, no or not reported
educ_inst	type of educational institutions (schools, others …)
medical_support	type of medical institutions (ward, hospital, others …)
cultural_inst	cultural institutions: yes, no or not reported
power_station	power station: yes, no or not reported
meteorol_station	meteorological station: yes, no or not reported
accuracy	accuracy of geographical position
documents	pdf files linked to the element on the map, with a description of the settlement (see 2.5.1. in this report)

Type_code	Type_description	Type_description_trans
1	gorod	town
2	poselok gorodskogo tipa	urban-type village
3	selo	centre village
4	poselok	village
5	derevnya	small village

Dataset No. 2: Abandoned settlements
Point data, 57 map elements (status: 2009)
Technical designation: settlements_abandoned

Abandoned settlements comprise formerly populated places that currently have no permanent inhabitants. Their locations are based on published maps, descriptions of local people, or information published in encyclopedia. Their exact position is in some cases verified on satellite images, with the exception of those in areas without high-resolution satellite image coverage, or where houses are not preserved.

Attribute	Explanation
name	name of the settlement
type_code	type of settlement, code number
type_description	type of settlement, description
year_established	year of establishment
year_abandoned	year when abandoned
remarks	comments on any of the database fields, reason for abandonment
accuracy	refers to the position of the place on the map
source	data source of the map element
documents	pdf files linked to the element on the map, with a descrition of the settlement (see 2.5.2. in this report)

Type_code	Type_description
1	abandoned village

Dataset No. 3: Airports
Point data, 34 map elements (status: 2009)
Technical designation: airports

Data on airports are taken from the Schedule of An-2 airplanes and Mi-8 helicopters, ”Naryan-Mar OAO”, and Le Petit Fute, guidebook on the Nenets Autonomous Okrug. Where possible, the position is verified on satellite images, though in a number of cases this was impossible and the airport symbol is placed adjacent to that of the corresponding settlement.

Attribute	Explanation
name	name of the airport or near-by settlement
type_code	type of airport, code number
type_description	type of airport, description
remarks	comments on any of the database fields
accuracy	refers to the position of the line on the map
source	data source of the map element

Type_code	Type_description
0	type unknown
1	commercial airport
2	airport category B
3	airport category 5
4	unclassified airport
5	heliport

Dataset No. 4: Roads and tracks (published maps)
Line data, 106 map elements (status: 2009)
Technical designation: roads_old

Data are taken from the General Geographical Map, 1:1 million “Arkhangelskaya Oblast – Nenetskiy Avtonomnyy Okrug” (Aerogeodeziya Roskartografiya 1995; revised in 2005). In areas where high-resolution satellite im-

ages exist roads have been traced more accurately in the dataset "Roads and tracks" and removed from this dataset. Winter roads, many of which have changed position according to oral information, have been omitted.

Attribute	Explanation
type_code	type of traffic line, code number
type_description	type of traffic line, description
remarks	comments on any of the database fields
accuracy	refers to the position of the line on the map
source	data source of the map element (year)

Type_code	Type_description
1	car road, tarmacked
2	car road, under construction
3	car road, not tarmacked
4	dirt road
5	track
6	winter road
9	railroad

Dataset No. 5: Roads and tracks (satellite images)
Line data, 3702 map elements (status: 2009)
Technical designation: roads_and_tracks

Roads and tracks, as well as other linear elements like power lines and forest aisles, have been traced on satellite images of GoogleEarth during the present project. Data are interpretative and not verified in field. It is important to keep in mind that images are from various years, so that the resulting maps do not represent a coeval status for the entire NAO. Data in areas of high-resolution imagery are much more detailed than in other areas (see dataset 22).

Attribute	Explanation
type_code	type of traffic line, code number
type_description	type of traffic line, description
year_	year of satellite imagery used for interpretation
remarks	comments on any of the database fields
accuracy	refers to the position of the line on the map
source	data source of the map element

Type_code	Type_description
1	track, single (or < 50 m wide)
2	track, multiple (usually 50-200 m wide)
3	road
4	forest corridor
5	power line

Dataset No. 6: Various places
Point data, 41 map elements (status: 2009)
Technical designation: various places

This dataset comprises places of infrastructural or other significance, observed on satellite images of GoogleEarth during the present project. Data are interpretative and not verified in field.

Attribute	Explanation
type_code	type of installation, code number
type_description	type of installation, description
year_	year of satellite imagery used for interpretation

remarks	comments on any of the database fields
accuracy	refers to the position of the line on the map
source	data source of the map element

Type_code	Type_description
0	unknown
1	cabin
2	historical site
3	bridge

Dataset No. 7: Impact areas
Polygon data, 198 map elements (status: 2009)
Technical designation: impact_areas

This dataset comprises areas with physical impacts from human actvities seen on satellite images, as observed on satellite images of GoogleEarth during of the present project. Data are interpretative and not verified in field.

Attribute	Explanation
type_code	type of area, code number
type_description	type of area, description (degree of impact)
year_	year of satellite imagery used for interpretation
remarks	comments on any of the database fields
accuracy	refers to the position of the area boundaries on the map
source	data source of the map element

Type_code	Type_description
1	developed area (industrial facilities, town areas, facilities in operation)
2	heavily degraded area (artificially reworked ground or densely grouped facilities and/or vehicle tracks)
3	heavy impact (areas, where vehicle tracks or industrial facilities are closer than ca. 1 km to most positions – rough estimates)
4	moderate impact (areas, where vehicle tracks or industrial installations are less densely distributed, though most positions are surrounded by such elements – rough estimates)

Dataset No. 8: Pipelines
Line data, 184 map elements (status: 2009)
Technical designation: pipelines

Mainly within areas of high-resolution coverage, pipelines are traced on satellite images. Outside of high-resolution coverage, or where high-resolution images are too old, pipelines have been transferred from more general map material, resulting in approximate positions and the lack of small feeder pipelines.

Attribute	Explanation
type_code	type of pipeline, code number
type_description	type of pipeline, description
constr_year	year(s) of construction
operated_since	year of first operation
owner_	company that owns the pipeline
impact	reported impacts on environment or traditional landuse
year_	year of satellite imagery used for interpretation

remarks	comments on any of the database fields
accuracy	refers to the position of the line on the map
source	data source of the map element

Type-code	Type_description
111	oil pipeline, above surface
112	oil pipeline, above surface, uncertain position
113	oil pipeline, subterraneous
211	gas pipeline, above surface
221	gas pipeline, subterraneous
311	oil pipeline, subterraneous or removed
411	oil pipeline, planned
412	oil pipeline, planned alternative
413	gas and condensate pipeline, planned

Dataset No. 9: Industrial large-scale facilities
Point data, 11 map elements (status: 2009)
Technical designation: industrial_places

This dataset shows oil and gas terminals, working settlements and harbours, based on generally known information.

Attribute	Explanation
name	name of the installation or settlement
type_code	type of installation, code number
type_description	type of installation, description
year_established	year of establishment
owner_	owner of installation
remarks	comments on any of the database fields
accuracy	refers to the position of the point on the map
source	data source of the map element
documents	pdf files linked to the element on the map

Type_code	Type_description
1	oil village
2	oil terminal
3	oil terminal/village
4	oil terminal, planned
5	gas terminal
6	gas terminal, planned
7	plant
8	harbour
9	ship landing place

Dataset No. 10: Oil facilities
Point data, 469 map elements (status: 2009)
Technical designation: oil_installations

This dataset shows drilling sites and other sites of industrial activity that leave distinct traces in the tundra. Data are from satellite imagery interpretation during the present project. It is important to keep in mind that images are from various years, so that the resulting maps do not represent a coeval status for the entire NAO. Data in areas of high-resolution imagery are much more detailed than in other areas (see dataset 22).

Attribute	Explanation
type_code	type of installation, code number
type_description	type of installation, description
owner	owner of the installation
year_	year of satellite imagery used for interpretation
remarks	comments on any of the database fields
accuracy	refers to the position of the point on the map
source	data source of the map element

Type_code	Type_description
1	production site (at the time of imagery)
2	drillling site (not known/indicated if abandoned)
3	work place (not known/indicated if abandoned)
4	site of ground mass movement (gravel pits, etc.)
5	industrial facility
6	helicopter platform
7	pipeline crossing (ramps to cross a pipeline)

Dataset No. 11: Subsoil resources - hydrocarbons
Polygon data, 96 map elements (status: 2009)
Technical designation: oilfields

The data source is a map prepared by the Nenets Information and Analytical Centre in 2001, showing hydrocarbon occurrences and trap structures. Only fields with confirmed economically interesting occurrences are shown here. The dataset is not meant to be geologically detailed, but to give a rough indication of the areas subject to (future) hydrocarbon development.

Attribute	Explanation
name	name of the oilfield
type_code	type of field, code number
type_description	type of field, description
state_exploration	state of exploration or development, code number
state_exploration_descr	state of exploration or development, description
remarks	comments on any of the database fields
accuracy	refers to the position of the area boundaries on the map
source	data source of the map element (year)

Type_code	Type_description
1	oilfield
2	oil and gas condensate field
3	gas and gas condensate field

Dataset No. 12: Subsoil resources - coal
Point data, 25 map elements (status: 2009)
Technical designation: coal

Data are from a map in the article by Andrey Getman: Ot razvedki – k dobyche, in Zapolyarnyy Region §2 (9), April 2008 and show known occurrences. None of these are today mined or have ever been mined on a large scale. The data have been included in the database to show areas of possible future georesource development.

Attribute	Explanation
type_code	type of resource, code number
type_description	type of resource, description
remarks	comments on any of the database fields

accuracy	refers to the position of the point on the map
source	data source of the map element

Type_code	Type_description
1	pit-coal
2	coal shale
3	bitumen

Dataset No. 13: Subsoil resources - non-metallic
Point data, 198 map elements (status: 2009)
Technical designation: georesources_nonmetallic

Data are from a map in the article by Andrey Getman: Ot razvedki – k dobyche, in Zapolyarnyy Region §2 (9), April 2008 and show known occurrences. None of these are today mined or have ever been mined on a large scale. The data have been included in the database in order to indicate areas of possible future georesource development.

Attribute	Explanation
type_code	type of resource, code number
type_description	type of resource, description
remarks	comments on any of the database fields
accuracy	refers to the position of the point on the map
source	data source of the map element

type-code	Type_description
1	barite
2	basalt
3	clay
4	clay for drilling
5	clay, coloured
6	clay, kuramizit
7	diamond
8	diatomite
9	dolomite
10	erratic blocks
11	fluorite
12	fluorite, optical
13	gypsum
14	limestone
15	limestone, shell
16	marble
17	mineral water
18	muscovite
19	petrified wood
20	phosphorite
21	quartzite
22	sand for ballast
23	sand for construction
24	sand for glass
25	sand for modelling
26	sand-pebble material
27	sandstone
28	slate
29	stone for construction

30	stone, utility
31	strontianite-celestine
32	whetstone
33	zeolite

Dataset No. 14: Subsoil resources - metallic
Point data, 57 map elements (status: 2009)
Technical designation: georesources_metallic

Data are from a map in the article by Andrey Getman: Ot razvedki – k dobyche, in Zapolyarnyy Region §2 (9), April 2008 and show known occurrences. None of these are today mined or have ever been mined on a large scale. The data have been included in the database in order to indicate areas of possible future georesource development.

Attribute	Explanation
type_code	type of resource, code number
type_description	type of resource, description
remarks	comments on any of the database fields
accuracy	refers to the position of the point on the map
source	data source of the map element

Type_code	Type_description
1	aluminium
2	antimony
3	arsenic
4	beryllium
5	copper
6	copper-cobalt
7	copper-nickel
8	copper-zinc
9	gold
10	iron
11	iron-vanadium
12	lead
13	lead-zinc
14	manganese
15	manganese-iron
16	mercury
17	molybdenium
18	nickel-cobalt
19	titanium
20	uranium
21	vanadium
22	zinc

Dataset No. 15: Traditional activities – places
Point data, 977 map elements (status: 2009)
Technical designation: trad_landuse_places
This dataset comprises places of traditional activities (reindeer herding, fishing, hunting, gathering and other areas with significance for indigenous culture), as indicated by respondents in the questionnaire survey.

Attribute	Explanation
type_code	type of installation, code number
type_description	type of installation, description
period_use	period when camp site is in use
year_	year of information
user_	user (cooperative, obshchina or person) of place
remarks	comments on any of the database fields
accuracy	refers to the position of the place on the map
source	informant (code number)

Type_code	Type_description
0	?
1	camp site
2	camp site, former
3	calving site
4	slaughtering site
5	reindeer coral
6	river crossing
7	saw mill, former
10	sacred site
11	hunting site
12	fishing site
13	marine mammal hunting site
14	gathering site
15	multi-use site
16	other site
21	hunting site, former
22	fishing site, former
23	marine mammal hunting site, former
24	gathering site, former
25	multi-use site, former

Dataset No. 16: Traditional activities – land use areas
Polygon data, 125 map elements (status: 2009)
Technical designation: trad_landuse_areas

This dataset shows areas of traditional activities (reindeer herding, fishing, hunting, gathering and other areas with signifance for indigenous culture), as indicated by respondents in the questionnaire survey. Reindeer pastures are only occasionally indicated, as most of the tundra is used as pastures.

Attribute	Explanation
type_code	type of area, code number
type_description	type of area, description
period_use	period (month) of year when used
year_	year of information
user_	user (cooperative, obshchina or person) of area
remarks	comments on any of the database fields
accuracy	refers to the position of the border on the map
source	informant (code number)

Type_code	Type_description
0	?
1	pastures
2	calving area
3	pastures, winter
10	mythological site
11	hunting area
12	fishing area
13	marine mammal hunting area
14	gathering area
15	multi-use area
20	pastures, former
21	hunting area, former
22	fishing area, former
23	marine mammal hunting area, former
24	gathering area, former
25	multi-use area, former
26	TTNU, former. "TTNU" refers to a formally established Territory of Traditional Nature Use.

Dataset No. 17: Traditional activities – migration routes
Line data, 55 map elements (status: 2009)
Technical designation: trad_landuse_routes

Reindeer migration routes of individual herds, as indicated by respondents in the questionnaire survey, are shown in this dataset.

Attribute	Explanation
type_code	type of route, code number
type_description	type of route, description
user_	user (cooperative, obshchina or person) of route
year_	year of information
remarks	comments on any of the database fields
accuracy	refers to the position of the line on the map
source	informant (code number)

type	Type_description
1	migration route
2	migration route, former

Dataset No. 18: License areas
Polygon data, 64 map elements (status: 2009)
Technical designation: license_areas

This dataset shows license areas as of 2004, from a map prepared by the Nenets Information and Analytical Centre. Updated information from 2009 has been added, based on a list of licenses from Rosnedra, where possible. An updated map of the areal extent of license areas as of 2009 has not been available.

Attribute	Explanation
license_owner	name of the license-holder (company)
date_issued	year of issued license
remarks	comments on any of the database fields
accuracy	refers to the position of the area boundaries on the map
source	data source of the map element (year)

Dataset No. 19: Protected areas
Polygon data, 12 map elements (status: 2009)
Technical designation: protected_areas

Nature reserves and national parks as well as Territories of Traditional Nature Use for indigenous people are shown in this dataset. For sources of the latter, see dataset 21. Borders of nature reserves and national parks are from the General Geographical Map, 1:1 million "Arkhangelskaya Oblast – Nenetskiy Avtonomnyy Okrug" (Aerogeodeziya Roskartografiya 1995; revised in 2005), supplemented by information from the Encyclopedic Dictionary "Nenetskiy Avtonomnyy Okrug".

Attribute	Explanation
name	name of the protected area
type_code	type of area, code number
type_description	type of area, description
year_established	year of establishment of protected area
remarks	comments on any of the database fields
accuracy	refers to the position of the area boundaries on the map
source	data source of the map element (year)

Type_code	Type_description
1	zapovednik (nature reserve)
2	zakaznik (national park)
3	others

Dataset No. 20: Traditional land use cooperations
Polygon data, 32 map elements (status: 2009)
Technical designation: trad_occupations_coop

Information from the former Office for Reindeer Husbandry Management of the NAO Agricultural Department , transferred from a map prepared by the Nenets Information and Analytical Centre.

Attribute	Explanation
name	name of the cooperation or clan community
center	village, where central management is placed
occupation	main traditional occupation pursued by the cooperation or clan community
number_employees	number of employees (year of reference)
documents	pdf files linked to the element on the map
remarks	comments to any of the database fields; "TTNU" refers to a formally established Territory of Traditional Nature Use
accuracy	refers to the position of the area boundaries on the map
source	data source of the map element (year)