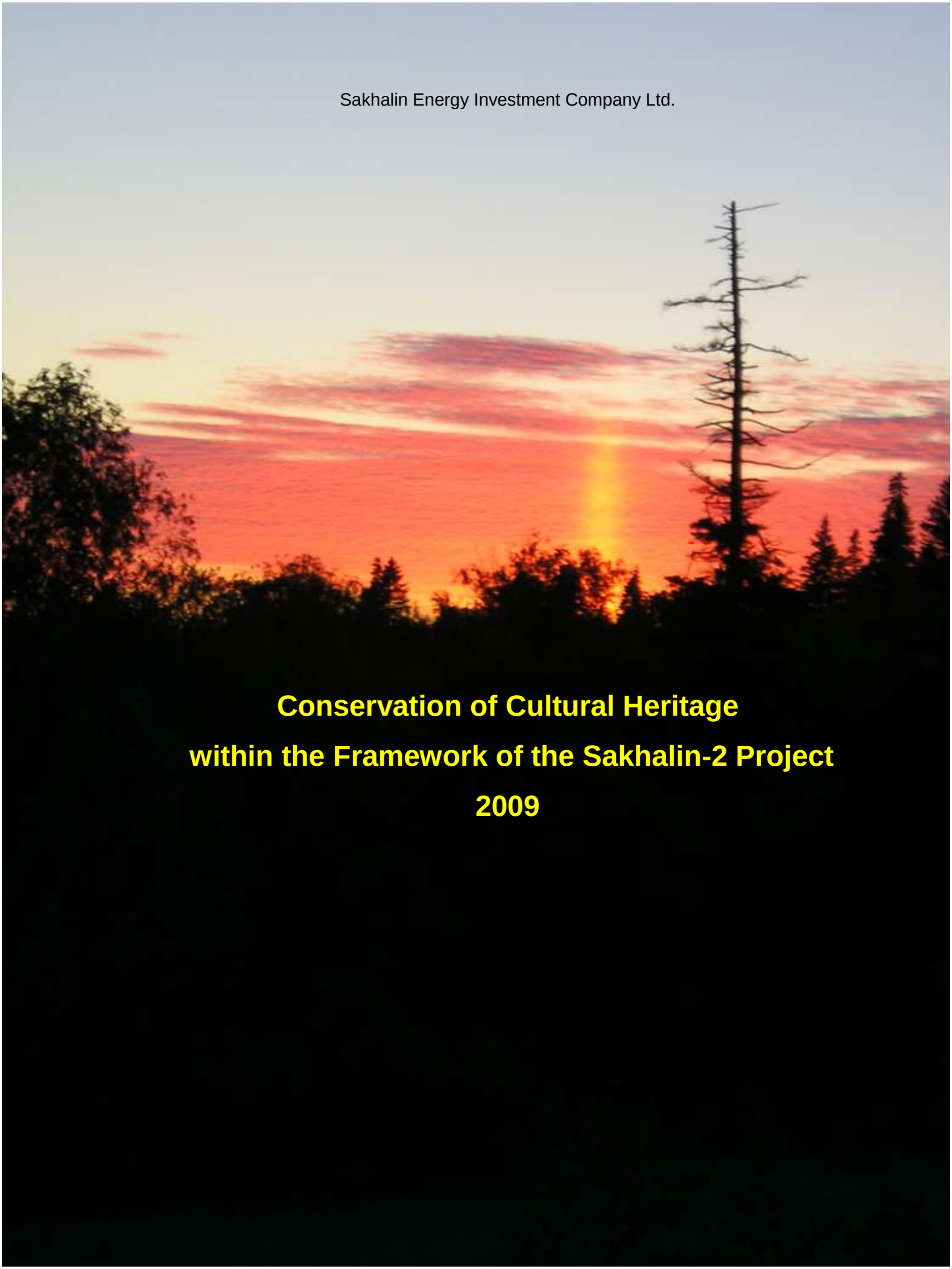
Sakhalin Energy Investment Company Ltd.



Conservation of Cultural Heritage within the Framework of the Sakhalin-2 Project

2009

"…Archaeological heritage is vitally important to our understanding of the history of civilizations"

Citation from the European Convention, 6th May 1969

Let man use centuries past as the material on which the future will grow...

Making a smooth descent over Sakhalin Island, our plane emerges out of the clouds. Through the window we catch a glimpse of the seashore and forested hillsides, which remind us of the words of that well-known song: "…*The green sea of the taiga sings sweetly beneath the airplane's wings…*". Below us pass mountain peaks and valleys, meandering rivers and streams, while narrow roads connecting distant villages stretch out along the shore line. Then another feature of the Sakhalin landscape catches our eye. Running north to south along the east coast of the island, a wide forestless strip, clearly visible from the plane, stretches as far as the eye can see over hills and valleys, lowlands and fields. Only ten years ago, there was virgin taiga here, but in the years 2004–08, construction machines were busy in this area. Today, the strip is gradually getting covered with vegetation, and in places, merging back into the surrounding landscape. This is the route of the underground pipeline which runs for over 800 km from the coast of the Piltun Bay in the north to the Aniva Bay in the south. The pipeline links two huge processing facilities which are part of the Sakhalin-2 Project.

The objectives, challenges and achievements of this project are well known to the Sakhalin residents. The oil and gas sector is an essential component of the Sakhalin regional economy. From the early 1990s, following the discovery of several large reserves, significant interest was generated in the region's offshore oil and gas resources. Several project sites were identified. The projects were numbered Sakhalin I to Sakhalin X. The operator in charge of one of the major investment projects, Sakhalin-2, is the international consortium Sakhalin Energy Investment Company Ltd, better known to Sakhalin residents as Sakhalin Energy.

Sakhalin-2 is a multifaceted, offshore, oil and gas production project in the Sakhalin region. Commenced in 1994, the objectives of the project were to construct two offshore production platforms, lay oil and gas pipelines, build an onshore processing facility (OPF), a liquefied natural gas plant (LNG plant) and an export terminal. By 2009, these ambitious plans were realised, the construction phase was completed and production was brought on line.
The unprecedented scale of the civil engineering work required for this project presented a number of challenges for the company in respect to the conservation of natural heritage and preservation of historical and cultural monuments. Today, we can sum up this activity, evaluate the results and share our experience. We shall talk about conservation and the study of cultural heritage (historical and cultural monuments) in the areas impacted by the Sakhalin-2 Project.

What is Cultural Heritage?

Sakhalin not only has rich natural resources, but also an ancient history. Modern towns, settlements and associated infrastructure are often situated in places where people used to settle, roam, hunt, fish, trade and wage wars. Generally speaking, the people who lived here were native islanders and migrants who made Sakhalin their temporary or permanent home. Many Sakhalin residents have their roots in this harsh region. These roots bind and keep them from leaving their native land. Some of their parents or grandparents came here in the austere 1940s–50s to regenerate the economy of the island. Some of them fought in the closing stages of World War II, liberating the territory of Sakhalin and the Kurils. Others, perhaps distant ancestors, were brought to the island's penal colonies which were established in the 19th century… Some families have kept reminders of those times, like faded photos or rare memorabilia. Some may be lucky enough to find their relatives’ names documented in archives. Whereas for others, only gravestones and family legends remain. In Northern Sakhalin, one can still find houses which were built a hundred years ago at the very beginning of the 20th century. In the towns of Southern Sakhalin, one can see a few remaining buildings of a peculiar architectural style reflecting the principles and techniques of Soviet town planning of 1950s–60s and houses built by the Japanese in 1930s–40s. Elderly Japanese visitors to Sakhalin Island can recall their childhood spent in those places. But today, little remains from the times when Southern Sakhalin was called Karafuto. In some places, gateways known in Japanese as “torii”, stone

staircases and concrete plinths have been preserved. These are the ruins of Shinto temples. In other places, one can come across remnants of bridges, workshops, old roads and foundations from other structures. All these represent milestones in the comparatively recent history of Sakhalin. This history is supported by records, and what has not been preserved in the form of physical evidence can easily be found in other sources—reminiscences from the older generation, books, documents, photos and newsreels, etc.

It is altogether far more difficult to restore the culture of a long-past age separated from our time by centuries and millennia. What kind of people inhabited the island in ancient times? Are the contemporary natives of Sakhalin direct descendants of those ancient people? When and how was the island first populated? What were the lifestyle and activities of its most ancient inhabitants? What were their links with neighbouring tribes? How did the material and spiritual culture of people inhabiting Sakhalin several generations ago develop? How can we use the historical experience of those people? These and many other questions are still to be answered by researchers, and much effort still has to be made to reveal the answers. The ancient history of Sakhalin is not supported by written records, and the only source of our knowledge about the people and the events of those ancient times lies in the material remains preserved in the ground where villages, nomadic settlements, burial sites, etc. once existed. It is these relics that help to bring the historical and cultural heritage of the past to the knowledge of today's generation.

Cultural heritage is a very broad concept. It includes, first of all, artefacts and cultural objects which have been created in the course of historical events. In as much as they are the evidence of civilizations from another era, they represent a genuine source of information about the origin and development of a culture. Hence, they are deemed valuable in terms of history, archaeology, architecture, town-planning, arts, science and technology, aesthetics, ethnology, anthropology, and social culture. Cultural heritage (historical and cultural monuments), wherever located, is of unique value to all the peoples of the Russian Federation and must be considered an integral part of universal cultural heritage. It is a silent but ever strong link to history, linking us with the recent and distant past. Indeed it is our historical memory.

The following cultural heritage objects can be found on Sakhalin:

- archaeological artefacts (dwelling sites, settlements, signs and traces of ancient civilizations, including all related relics);

- landmarks (buildings and engineering structures);
- earthworks of religious significance, including burial mounds, cemeteries and burial grounds;
- works of art (including works of monumental art—monuments and memorials);
- places of interest (historical landscapes and areas of cultural significance); and
- items and objects having significance to museums or having historical, scientific or memorial value.

Why Should Cultural Heritage Objects Be Protected and Conserved?

First of all, this is because the Past belongs to us all. Cultural heritage is unique and irreplaceable. It links us with the people and events of a past era. If any cultural heritage objects are destroyed, either by man's influence, natural disaster or vandalism, the information contained in them is lost forever.

Secondly, cultural heritage is protected by Law. In Russia, just as in many other countries of the world, there is a legal framework determining the rights, obligations and responsibilities of individuals and corporations in relation to cultural heritage. It is, primarily, the Federal Law on Cultural Heritage (Historical and Cultural Monuments) of the Peoples of the Russian Federation No. 73-ФЗ dated 25th June 2002; Legal Foundations of the Russian Federation on Culture—Federal Law No. 3612-1 dated 9th October 1992; laws and regulations of the Russian Federation regulating activities concerning architectural heritage; various provisions and guidelines aimed at conservation and protection of all types of cultural heritage in Russia. The law on Culture dated 6th October 2000 has been approved by the Sakhalin Regional Duma and is in force in the Sakhalin region.

There are also international standards and guidelines for the protection of cultural heritage and primarily, archaeological artefacts, for example, the European Charter for Protection and Management of Archaeological Heritage drawn up by the International Committee for Management of Archaeological Heritage in 1990, the Convention on the Protection of Archaeological Heritage (Valletta, 1992), and others. Archaeological heritage is assumed to be exposed to the greatest risk across the world. As land development increases, relics buried under the soil become far more vulnerable, because any activity resulting in the damage to the soil can damage archaeological artefacts.

The development of oil and gas projects by foreign companies in Russia created the need to apply international procedures and regulations. Moreover, it required the observation of international technical and environmental standards, including those relating to industrial and environmental safety and the conservation of historical and cultural heritage.

The Policy of Sakhalin Energy in Relation to Cultural Heritage Objects

One can be sure that, when digging a 800 km long trench anywhere in the world something ancient, exceptional or rare will be found. The island of Sakhalin, as elsewhere, conceals many historical mysteries and traces of its ancient past. This has been proven by the discovery of more than 1.5 million archaeological relics, which were unearthed across the Sakhalin region before the turn of the 21st century. Other unique paleontological finds have also been made. Apart from this, a small population of native peoples of the North still live on the island, and their traditions and modern culture also represent precious historical heritage.

The policy of Sakhalin Energy in relation to cultural heritage is based on two fundamental principles:

1. Recognition of the importance of conserving cultural heritage.
2. Compliance with the requirements of Russian legislation and the rules of international law.

In the Sakhalin-2 Project, the territory of Sakhalin saw a colossal amount of civil engineering works, associated with the construction of oil and gas pipelines which ran for over 800 km, oil and gas storage depots, refineries, auxiliary engineering facilities and other infrastructure. The project included the building of construction camps, Pipeline Maintenance Depots (PMDs), storage areas, pump stations, in-line valve stations, access roads, etc. Yet, vast as the scope of work was, the Company made every effort throughout their operations to ensure the conservation and study of any cultural heritage objects which could potentially have been affected.

In accordance with the law, before commencement of any excavations, allotment of land had to be approved. The approval process included historical evaluation of the allotted lands, such that potential objects of historical or cultural value could be identified. So, even at the design stage, 1996–2003, the Company organised preliminary historical, archival and field archaeological surveys of lands along the route of the would-be construction works. Experts from the Sakhalin State University (SSU) and the Sakhalin Regional Museum of Local History (SRMLH) took part in these surveys.

A total of 68 cultural heritage objects were discovered during the pre-construction stage in and around the areas of Sakhalin-2 Project (both along the route of the pipeline and on other construction sites). They included historical and cultural monuments from different eras, ranging from early Paleolithic to modern time. Amongst others, the discoveries included sites and settlements of ancient people, ethnographic objects, military camps, battle sites from two wars (1905 and 1945), Japanese architectural monuments, historical objects of the Japanese Karafuto government (1905–1945) and artefacts from Russian post-war history. The majority of the cultural heritage objects were archaeological monuments dating from the Early Paleolithic to the Late Middle Ages. It is of interest to note that

during the preliminary survey of the would-be pipeline route in 1998, a discovery was made which turned out to be the oldest geo-archaeological find not only for the Sakhalin region but also for the whole Russian Far East. This was the multi-layer Sennaya-1 site. Based on palynological, geomorphological, granulometric, stratigraphical and optically stimulated luminescence dating, the age of the finds was determined to be 140,000–230,000 years. The culture-containing layers with stone artefacts correlate with the warming periods within the Ice Age of the second half of the Middle Pleistocene age. Study of the stone processing technology revealed that the stone industry dated back to the pebble industries of the Lower Paleolithic Age[1]. This truly sensational discovery literally overthrew the existing theories about the time of the original Sakhalin settlements, which in turn stimulated further research.

Following the work performed by the Laboratory of Archaeological Research (LAR) of the Sakhalin State University at the request of the Company in 1996–2003, 14 scientific reports were made, in which the results of field and desk studies were presented. Specialists from the Institute of History, Archaeology and Ethnography of the Far Eastern Peoples of the Russian Academy of Sciences confirmed the great significance of the archaeological monuments discovered on the route of the planned pipeline.

In accordance with Russian legislation, all the cultural heritage objects (hereafter referred to as "**CHOs**") found and described in the reports are subject to conservation in the course of any business activity, especially that associated with earthworks. In 2003, in collaboration with Sakhalin State University, the Company developed an Action Plan for all Cultural Heritage Objects, which became the basis for all decision-making procedures and activities designed to protect historical monuments at the construction stage. In accordance with the requirements of the World Bank, which was the major Project creditor, the plan included a requirement to protect the sacred sites of the native people, religious sites, paleontological remains and sites with unique natural features.

Sakhalin Energy arranged a series of respective activities which aimed not only to mitigate the impact of their work on the Island's ancient and modern heritage, but also to retain cultural values for future generations and facilitate their study from the perspective of modern science. In the first instance, a decision was taken to recruit highly skilled professionals— historians and archaeologists—as contractors to carry out work aimed at conservation of Sakhalin's cultural heritage. The Company issued a tender in Spring 2004. The result of the tender was that Sakhalin State University became the company's General Contractor for conservation of cultural heritage (**CCCH**), and the Laboratory of Archaeological Research (SSU LAR) became the main executive contractor for the period from

[1] A.A. Vasilevsky. Sakhalin Island Stone Age. Historical Library of Sakhalin and the Kuril Islands Series.— Yuzhno-Sakhalinsk: Sakhalin Book House, 2008.—p. 71-96.

September 2004 to December 2008. From 2005, it acquired the status of the Sakhalin Archaeology and Ethnography Laboratory of the Archaeology and Ethnography Institute of the Siberian Branch of the Russian Academy of Sciences and the Sakhalin State University[2] . The work was led by Professor Alexander Alexandrovich Vasilevsky, Doctor of History. The staff members of LAR included research archaeologists and lab assistants (V.A. Grischenko, V. D. Fedorchuk, P.V. Kashitsyn, S.V. Tkachenko, V.V. Fedorchuk, E.V. Berseneva, A.S. Peregudov, A.V. Mozhayev, S.A. Tsvetnov, V.A. Manakin and others). They formed the core of the working group of CCCH. Temporary personnel, including students from SSU, Sakhalin regional ethnographers, and representatives of the native peoples of Sakhalin, were invited to carry out work in the field and to process the collections. The best specialists from Sakhalin in the field of history and archaeology, and experts from Khabarovsk, Novosibirsk and Moscow were all invited to carry out surveys and recovery excavations, whilst also monitoring the pipeline route and the main construction sites. The scientific staff of the Sakhalin Regional Museum of Local History (SRMLH) was also taken on as a subcontractor.

The Contractor for conservation of cultural heritage (CCCH) became the main guide and operator for the Company policy on cultural heritage throughout the construction period of the Sakhalin-2 Project.

Training of Personnel and Contractors of the Company

An important factor enabling conservation of cultural heritage in the course of global construction projects is the level of expertise, interest and responsibility of the people involved in construction, as well as the general public's attitude to the issue. It is no coincidence that the following assignment is declared in Article 2 of the Main Provisions of the Charter for the Protection and Management of Archaeological Heritage (1990): “Minimise the destruction of archaeological heritage and ensure participation of the general public in decision-making with regards to its protection”.

Archaeological heritage is a fragile and non-renewable cultural resource. Land use must therefore be controlled and developed in order to minimise the destruction of archaeological heritage.

Active participation of the general public must form part of policies for the protection of archaeological heritage. Participation must be based upon access to knowledge required for decision-making. The provision of information to the

[2] A.A. Vasilevsky. Sakhalin Archaeology and Ethnography Laboratory of the Archaeology and Ethnography Institute of the Siberian Branch of the Russian Academy of Sciences and the Sakhalin State University: Past, Reality, Perspectives as Seen in 2006 // Nature, History and Cultural Heritage of the Sakhalin Oblast: Research and Discoveries. Proceedings of the Scientific Conference dedicated to the 110th Anniversary of the Sakhalin Museum (1896-2006), Yuzhno-Sakhalinsk, 26-28 November, 2006).—Yuzhno-Sakhalinsk, 2008, pp. 122-126.

general public is therefore an important element of an integrated conservation process.[3]

The conservation of historical sites depends to a large extent upon the people involved directly in the construction work. Practice has shown that during earthworks, there is a good probability of finding some items of historical value. The respective personnel should be provided with adequate knowledge in this field, such that finds are not overlooked and measures are taken for their conservation. So, the Company made it their business to run educational and explanatory activities. In 2004, specialists of SSU prepared and published a book called "Evaluation and Protection of Archaeological Sites (a manual for personnel working on the Sakhalin-2 Project)"[4], containing texts in Russian and English.

Some time later, in 2006, the Company published a booklet in Russian and English called "Actions in respect to Cultural Heritage: Historical, Archaeological, Ethnographic and Paleontological Artefacts"[5]. It summarised the requirements and procedures for contractors and employees in relation to the conservation of cultural heritage within the framework of the Sakhalin-2 Project.

The manuals offer guidelines to employees of Sakhalin Energy and its contractors in cases where it is believed that a site of historical interest has been uncovered. It may be a find of a single item, remains of an old culture or an area of ancient economic activities, tombs, paleontological finds, etc. The manuals are not a comprehensive guideline for identification of artefacts, but they give a general idea of ancient artefacts which can be discovered during construction. They also describe the basic criteria enabling the evaluation of the importance of the

[3] ICOMOS Charter for the Protection and Management of the Archaeological Heritage (1990)—http://www.international.icomos.org/e_archae.htm

[4] A.A.Vasilevsky, P. Sneptcamp, P.V. Kashitsin, V.A. Grischenko. Evaluation and Protection of Archaeological Objects. Manual for personnel of Sakhalin-2 Project. Evaluation and Protection of Archaeological Objects. Yuzhno-Sakhalinsk: Sakhalin State University, Sakhalin Energy, 2004.—60 pp.

[5] Actions on Cultural Heritage—Historical, Archaeological, Ethnographic and Paleontological Artefacts (Memo for personnel of contractors for implementation of Sakhalin-2 Project). Yuzhno-Sakhalinsk: Sakhalin State University, Sakhalin Energy, 2006. —20 pp.

discovered materials, and specify the basic conservation methods for cultural heritage objects, found during the construction period of the Sakhalin-2 Project.

Special presentation programmes were drawn up, and induction courses for the identification and protection of cultural heritage objects were presented. The following issues were covered during the classes (training):

- regulatory framework and the Company's obligations in the field of conservation of cultural heritage;
- general information on archaeological, historical, ethnographic and paleontological objects discovered during the construction work;
- familiarisation of the personnel working on the Sakhalin-2 Project with the basic concepts and principles of cultural heritage conservation;
- responsibilities of the construction contractor;
- procedure for construction personnel in the event of discovering potentially important items or objects; and
- protective measures in relation to CHOs taken within the framework of the Sakhalin-2 Project.

The training activities were performed most intensively in 2004–2006, i.e. at the beginning of construction. The classes were both formal (delivered at the offices and construction camps of Yuzhno-Sakhalinsk, Nogliki, Val, Onor, Molodezhnoye, Smirnykh, Tumanovo, Sokol villages) and informal (as briefings or talks with the personnel directly on the route or other work areas).

The instructive talk with the representatives of Starstroi and Emercom Demining on the pipe construction site in Smirnykh District, within the boundaries of the cultural heritage site ***Scene of Fierce Fighting between Roschino and Pobedino in August 1945*** *(Haramitoge fortified area) 2005.*

In all around 900 people were given instruction including personnel from Sakhalin Energy and its contractors (Starstroi, VNPS, OMNPS, SMU-4, LSM, SMT, KNGS, Emercom Demining, Domen, Rosstroiizyskaniya, Daltisiz, Driltech, etc.). Personnel training was given mainly for the Contractor's employees on the subject of conservation of cultural heritage sites during the monitoring. Special attention was paid to the foremen performing construction work at the so-called "areas of high cultural sensitivity", primarily close to the well-known archaeological and historical sites.

Training classes were given with the help of visual aids: slides or presentations, distribution of the booklet Actions in respect to Cultural Heritage. Sakhalin Energy printed a series of leaflets and posters, books for recording and registering finds were prepared, and a list of areas requiring special attention was compiled. These were the so-called "areas of high cultural sensitivity" in the areas of the Sakhalin-2 Project pipeline construction which were identified by professional archaeologists based on long-term experience and knowledge of the local culture. They included:

- areas with high concentrations of archaeological sites;
- areas adjacent to the boundaries of the well-known historical and archaeological sites; and
- territories which are promising in terms of archaeology: coastal areas, estuaries, river banks, lakeshores and lagoon coasts, paleorelief terraces, i.e. sites which most probably could be settled by man.

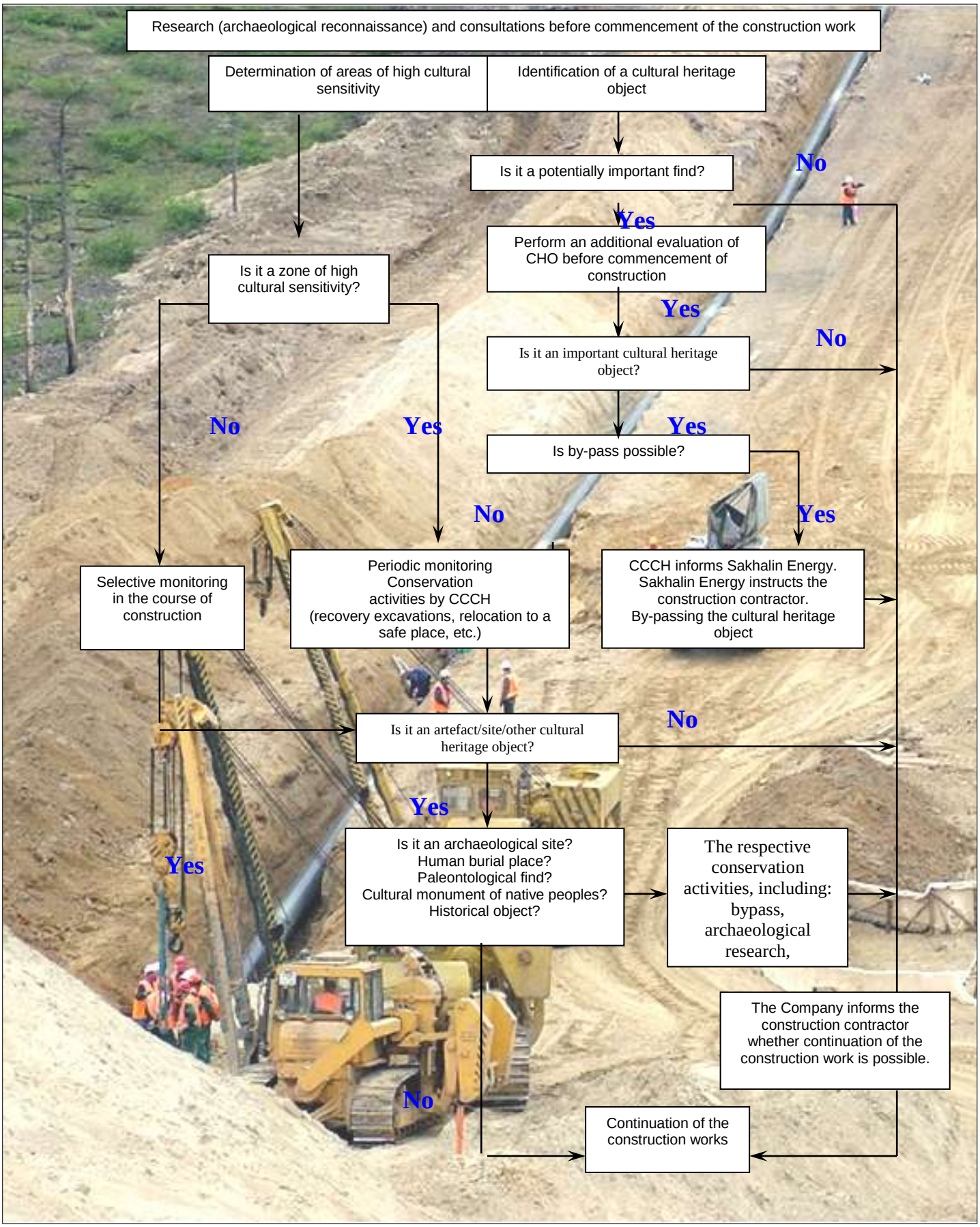
Procedures and Methods for the Conservation of Cultural Heritage

In accordance with Russian legislation, appropriate measures were taken for timely discovery and conservation of cultural heritage sites in those areas directly and indirectly affected by the project operations. These measures were taken at the project documentation development stage and included:

- preliminary surveys or archaeological reconnaissance, i.e. a thorough field survey of the areas of future operations;
- identification of cultural heritage protection areas, their designation and management;
- relocation of moveable historical objects to safe sites for their subsequent restoration, storage and exhibition;
- development of design solutions for by-passing the newly discovered CHOs (pipeline or access road re-routing, construction site relocation, etc.);
- using methods of horizontal directional drilling (HDD) for bypassing the large underground objects of special historical importance;
- maximum possible narrowing of the pipeline route;
- monitoring of construction work in the areas of "high cultural sensitivity" with the aim of uncovering potential archaeological sites (buried underground and unseen from the outside); and
- archaeological excavations in the areas directly affected by project work.

In collaboration with the Contractor's conservation specialists, the Company developed and tested a decision-making flow chart used for determining procedures in relation to cultural heritage objects which existed or may be found in the course of the project work.

FLOW CHART Used During the Sakhalin-2 Project for the Decision Making Process Relating to Cultural Heritage Objects



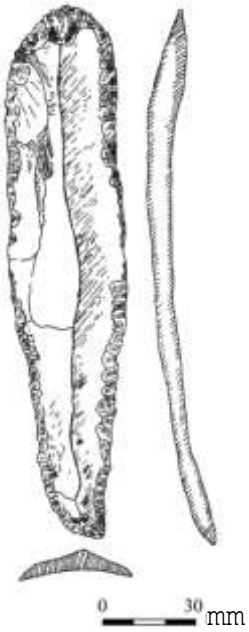
Construction sites at the largest Sakhalin-2 Project facilities required particular attention, so even at the design stage, areas delineated for construction camps, the Onshore Processing Facility (OPF), the pig launcher (cleaning and diagnostic launcher sites) in the Nogliki District, the gas compressor station in Gastello village and the LNG plant in Prigorodnoye village of Korsakov District were investigated by the specialists for any archaeological artefacts and historical objects.

Survey of the Plant Construction Site
(LNG Production)

In 7 years from the start of construction of the first Russian LNG plant near Prigorodnoye village, the landscape changed beyond recognition. Many Sakhalin residents remember what was situated on this territory several decades ago. But by studying chapters of the history books, many other interesting facts are revealed. Archive and literary sources, including those in Japanese, describe the events which happened one hundred years ago, and reveal the archaeological findings related to events which took place both recently and several thousand years ago.

In 1998, a preliminary survey was performed on the site of future construction. Then in 2003 to 2004, archaeologists from Sakhalin State University and Sakhalin Regional Museum of Local History carried out so-called monitoring as the earthworks were performed, i.e. supervision of excavation work, aimed at searching for any objects of historical and cultural significance buried underground. The fact that this territory was inhabited in ancient times was

revealed from the works of Japanese archaeologist Niioka Takehiko[6]. Even in the 1930s an item dating back to the Neolithic Period, aged approximately 5,000–7,000 years, was found during the construction of the Japanese village known as Merey. It was a 17 cm long flint blade with a sharp cutting edge. Such an item was multifunctional: it could be used as a knife, cutter or scraper. The site was called Fukaumi Merey.



During the survey of the planned LNG plant construction site, Sakhalin archaeologists found a polished hand-axe, a flint blade, roughly shaped stone implements and chippings, indicative of stone age waste material. Their age was estimated to be 2,000–5,000 years. Unfortunately, over the past fifty years at least 20 m of the shore line around the Aniva Bay near the former Prigorodnoye village has been eroded by the sea, and the main part of the ancient site was apparently destroyed. In former times, people inhabited not only the coastal areas, but also the river valleys. As a rule, winter settlements were situated inland, where forested hills afforded protection from the penetrating sea winds. As a result of the survey of the Mereya River, a half-buried dwelling of the Okhotsk cultural period was excavated. The people who built it lived some 800–1,000 years ago (in 10th–12th centuries AD).

The historical data show that up to the middle of the 19th century Merey (Merui) Ainu settlement was located on the site of Prigorodnoye village. In Ainu language the name means “a bad road” or “a road along the lakeshore”. From 1869, after establishment of a penal colony on Sakhalin Island and foundation of the first Russian settlements, this territory was included in the Korsakov District. For a short period of time (in 1897) a brick factory operated in the settlement of Merey supplying the Korsakov jail with bricks. Within a year, a herring industry belonging to fishery manager Kramarenko was founded here. Ninety workers made mineral fertiliser in 12 boilers. The mineral fertiliser was bought by the Japanese. At the same time, a Japanese entrepreneur named Kokura Matoi organised a whaling company named “Mereysky Most” (“Merey Bridge”) in collaboration with a Vladivostok-based manufacturer called Demby.

During the Russo-Japanese War in July 1905, the Japanese army stormed ashore near Mereya village. Russian militiamen offered heroic resistance, but the forces were unequal, and the Japanese troops gained control of the island. As a result of

[6] Niioka Takehiko. Ancient Cultures of Sakhalin and Hokkaido. Volume 2. Sapporo, 1977.—p.70.

Russian defeat in the Russo-Japanese War, the southern part of Sakhalin was ceded to Japan, and the Japanese village of Merey appeared in the valley of the Mereya River. By 1935, its population had grown to 1,005 people. In 1925, a primary school was built in the village, a larch grove planted nearby, and a "goshineihoanden" fire-resistant reinforced concrete pavilion was built for safe-keeping of the Emperor's portrait and the Emperor's Rescript on Education. In 1926, an 11m high, concrete monument in the shape of a triangular bayonet was installed on the site of the invasion by the Karafuto army. The remains of that monument erected in commemoration of the events of July 1905 can still be seen on a terrace to the west of LNG plant. Some remains of the Merey Shinto temple, Hachiman Jinja, can also be found nearby.

In 1950–1970s, Prigorodnoye village grew up on the estuary of the Mereya River. Over time, it became a dacha suburb for the citizens of Korsakov. Clearly, all these historical events could not but leave some material traces, many of which are preserved in the ground and on its surface. Such traces were found by those monitoring the construction work.

One of the most valuable historical buildings saved from destruction is the reinforced concrete fire-resistant pavilion located near the Japanese school. The portrait of the family of Emperor Hirohito with a copy of the Rescript of Education is stored there. This pavilion is a rarity nowadays. There are no such pavilions left even in Japan, as after the war all school pavilions were destroyed. Southern Sakhalin, the former Karafuto governorship, became the only place where they remain. In October 2002, on the initiative of the Sakhalin Regional Museum of Local History and with the financial support of Sakhalin Energy, the school pavilion was relocated from the site of the forthcoming construction work, restored and installed in the yard of the Sakhalin

Regional Museum of Local History. It is a unique historical and architectural monument of the Karafuto period[7].

In the course of monitoring the plant construction site, a small paleontological collection was compiled which included fragments of ammonites, including well-preserved ones. The samples collected from the Upper Cretaceous deposits are dated 65–100 mln years, and those from the Cenozoic Neogene deposits are dated 5–25 mln years. There are also some finds of interest which, whilst not unique, add to our knowledge of the past and give a vivid idea of the events and people who inhabited this land in more recent times. They include household items belonging to Japanese settlers of the 1930–1940s and Russian settlers of the middle of the 20th century: fragments of earthenware, tools, household items, bricks with the manufacturers' brand names, etc. All archaeological, historical and paleontological objects found in the course of monitoring have been handed to the Sakhalin Regional Museum of Local History for permanent safe-keeping[8].

[7] For detailed historical notes on the events of the beginning and middle of the 19th century in the area of Prigorodnoye village refer to the following book: I.A Samarin. Retained Memory (Historical Monuments and Places of Interest in the area of Sakhalin-2 Project Work). Yuzhno-Sakhalinsk, 2008.—p.79-91.

[8] G.V. Matiushkov, I.A. Samarin, S.V. Tkachenko, V.O. Shubin. Monitoring of Work under the Sakhalin-2 Project on LNG Plant Construction Site in Prigorodnoye Village in August-November 2004 // Bulletin of Sakhalin Museum. Annual Publication of the Sakhalin Regional Museum of Local History. No. 14. Yuzhno-Sakhalinsk: Sakhalin Regional Museum of Local History, 2007.—pp. 104-131.

The most interesting finds were exhibited in 2007–2008 at exhibitions in the Korsakov District Museum of Local History and in the Training Centre at the premises of the LNG plant, i.e. at the site where many of the exhibits had been discovered.

Archaeological Investigations along the Route of the Pipeline of the Sakhalin-2 Project

Archaeological investigations involve the scientific study of a territory aimed at discovering new archaeological sites. They include primary field studies and acquisition of modern data about previously discovered objects. Before the commencement of excavations, the whole pipeline route which comprised a 500–1,000 m wide corridor with access roads, was investigated by experienced archaeologists. The archaeologists were looking primarily for certain indicative features of archaeological sites visible on the surface. These could be signs of ancient dwellings: pits are still preserved at the excavated sites where people had once lived before they were abandoned. They may have different shapes (circular, square, rectangular), different dimensions (3–20 m in diameter), and depths of 10–15 cm to 1.5 m; dwelling pits are often found alongside collapsed household waste pits. The number of dwelling pits per settlement can vary from 1–2 to several dozen or even several hundred dwellings. Ancient dwelling pits are easily noticed on the surface if they have distinct contours and are of sufficient depth. However, it is often the case that only shallow hollows remain on the dwelling sites. Such shallow hollows can go practically unnoticed

on the surface. In the course of time, the territory of these ancient settlements has been overrun by forest. Consequently, it is very difficult to find any remains of these dwelling pits in thick vegetation. Ancient settlements are of the highest scientific value. They are important cultural heritage objects, which include a cultural layer and remains of permanent and seasonal dwellings used over a long period of time. It is known that people settle repeatedly on the same sites, if they have a similar way of life. So, some dwellings related to different time periods and constructed by people of different cultures are often grouped together on the same settlement site. Often, settlements will include objects without any visible external features: burial grounds, production and ritual sites. Settlements are subject to conservation or excavation before the commencement of construction work as they are cultural heritage objects which contain structures and artefacts of great cultural and scientific value.

In the course of the investigations, archaeologists conduct a thorough visual inspection of naturally occurring disturbed ground (shorelines eroded by the sea, ravines, uprooted trees, sand dunes, etc.), and soil disturbances caused by man, such as ploughed fields, vegetable gardens, quarries, roads, etc.

Some artefacts can be found on the disturbed surface such as stone implements, bone, ceramics, animal remains and traces of bonfire sites etc.

Artefacts such as these are evidence of an archaeological site—home to prehistoric man.

As a rule, there is a cultural layer on such sites (i.e. a layer of earth containing material remains and traces of habitation), but any visible signs of old dwellings are absent. It is supposed that people visited such site repeatedly on their way from one settlement to another, while hunting and fishing, mostly in the warmer months. Either they would have lived here in light overground dwellings, or spent nights in other places. The sites might be centres for tool production due to their proximity to some sources of raw materials, or fishing and hunting sites or resting places. Sites where the cultural layer is preserved are subject to conservation as they are valuable cultural heritage objects. Sites damaged by natural and/or human activity are subject to comprehensive study during archaeological excavations. Alternatively, material is collected from the disturbed surface and details of the disappearing site are carefully documented.

In the course of the investigations, the archaeologists clear sites which look promising from an archaeological point of view and conduct test digs even when there is no external evidence of an old dwelling. This method often leads to the discovery of an archaeological site. Moreover, digs often reveal a cultural layer. Useful information can be gathered for dating purposes by studying its characteristics such as depth, extent and borders.

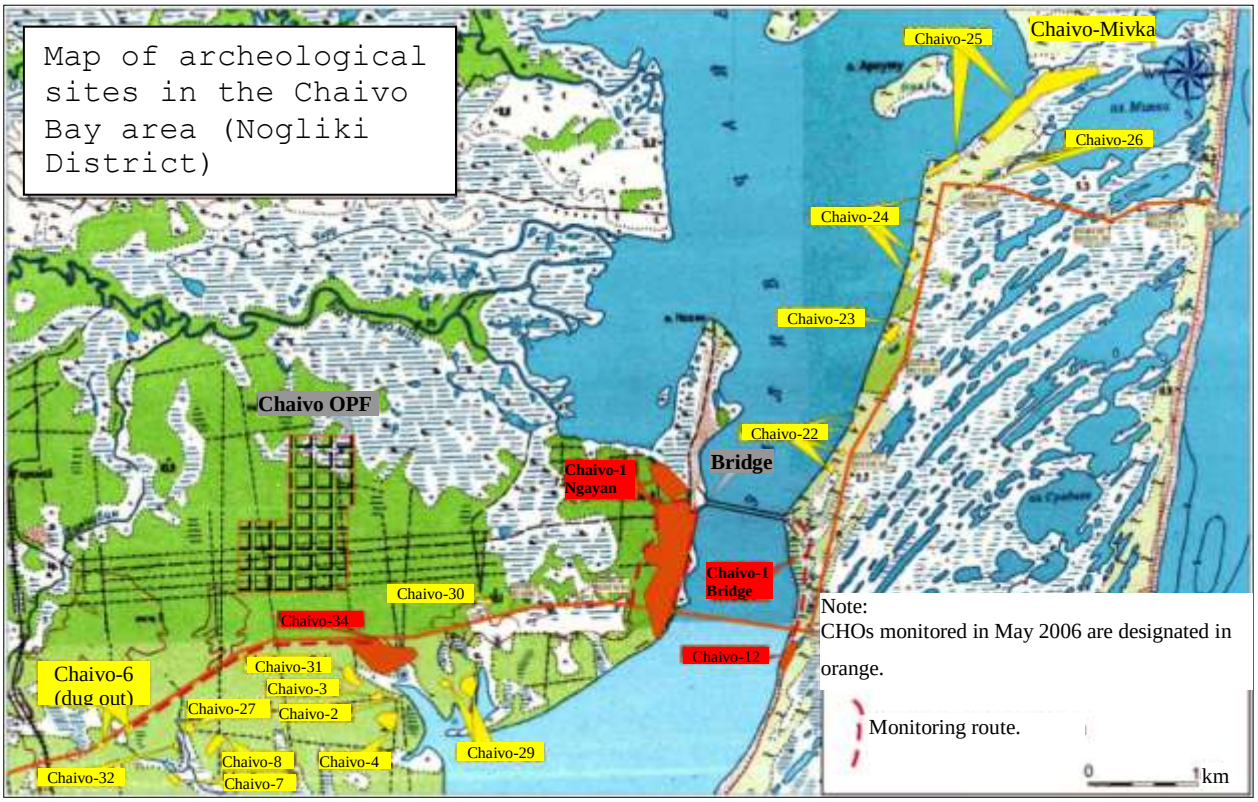
There are sites with scattered artefacts in Northern Sakhalin. Usually they are discrete ancient or old sites or small concentrations of artefacts located in natural layers, or on the ground surface at some distance from each other over a wide area. There is either no cultural layer or it is found in some places in insignificant clusters. Any study of such site by means of excavations during construction is impossible as there is essentially no specific site. It is also impossible to protect artefacts lying on the surface against the forces of nature or human activity. So, the material is collected and recorded, a site specification is compiled and monitoring is performed in the course of construction work.

In 2004, with the aim of protecting the threatened western grey whale, the Company took a decision to re-route offshore pipelines connecting two production platforms at the Piltun-Astokhskoye oil field with the onshore pipeline network. It was decided to relocate them to the south away from the main feeding grounds of

the grey whale. Archaeological investigations along two alternative pipeline routes near the Chaivo Bay (Nogliki District) brought favourable results: about 16 archaeological sites in total were discovered within a 500 m corridor of the investigations. Among them there are both separate dwelling pits and settlements with distinct hollows on the surface from former dwellings. The number of old dwellings vary from 2–3 to a few dozens.

The Chaivo 1 settlement turned out to be one of the largest archaeological sites in Northern Sakhalin. It comprises a series of sites including cultural layers and remains of over 260 dwelling places and structures from the Neolithic Period, the early Iron Age and Middle Ages, aged about 7,000 years to the end of the 19th–beginning of the 20th century, i.e. up to the modern era. The settlement occupies about 10–15 thousand sq. m. and stretches out 1.5 km along the western coast of the Chaivo lagoon. Special measures were taken to conserve this archaeological site during the construction work due to its uniqueness and great historical and scientific value. Horizontal directional drilling methods were used for pipeline construction in this area, so the pipeline was laid beneath the archaeological site at the foot of the Chaivo Bay at a depth of over 15 m. The site of old dwellings was demarcated as a protected area with special signs and became an exclusion zone for vehicles, construction and any other economic activities.

In 2005, archaeological investigations continued in the area along the western coast of the Chaivo Spit where the pipeline crosses the bay to the shores of the Sea of Okhotsk. Operations included survey of the **pig trap** construction site. Seven new archaeological sites were discovered. They are mostly seasonal sites or sites with scattered artefacts. The cultural layer comprises separate artefacts scattered over several thousand sq. km. There are some



settlements with a few (from 1 to 4) dwellings. The majority of archaeological sites on the Chaivo Spit are located around the bay, on 3–5 m terraces which are now thickly wooded with mountain pine.

As a result of the archaeologists' work at the Sakhalin-2 Project, it was discovered that the Chaivo Bay area is one of the richest districts of Northern Sakhalin in terms of archaeology. It is characterised by high concentrations of archaeological sites from different eras and belonging to different cultures. Owing to its rich biological resources, it has attracted the attention of the native population for centuries. This territory had abundant wildlife (deer, small fur-bearing animals, sea animals, birds and fish) and edible plants (berries, mushrooms, mountain pine nuts, etc.). Even today one can find traces of the temporary dwellings of Ulta reindeer herders, who would make their seasonal migration in search of grasslands. Wild deer can also be found grazing.

Detailed survey of a 500 m corridor along the route of the pipeline in 2005 and 2006 led to the discovery of over 30 new archaeological sites, individual archaeological finds and several historical objects from the middle of the 20th century. As a result of the long-term archaeological investigations on Sakhalin, including those within the framework of the Sakhalin-2 Project, a map of archaeological sites was plotted. It was discovered that the majority of ancient sites form defined groups or concentrations. Such concentrations are found along the route of the pipeline on the shore of the Chaivo and Old Nabil Bays in the valleys of the Dzhimdan, Chachma, Nabil, Malaya Veni, Pugachevka Rivers, in Tymovsk and Susunay valleys, and on the watersheds—mountains and hill tops (for example, on the Nabil Crest and on the Palevo Heights near the village of Yasnoye).

As a result of the survey, a list was drawn up of around 200 cultural heritage objects located in the areas designated for construction work. Site conservation areas were identified and their features and coordinates stored in a central database. Recommendations were made for the construction of the pipeline ensuring minimum impact on the archaeological sites.

These surveys were carried out at most of the cultural heritage sites, thus securing their future. In more than 30 cases, the route of the pipeline was altered to by-pass the sites; the bypass of the large Chaivo 1 and Nabil 1 settlements was achieved using horizontal directional drilling (**HDD**). Archaeological sites located in the areas affected by the Sakhalin-2 Project were designated as conservation areas.

By conducting preliminary surveys along the route of the pipeline and monitoring the construction work, destruction of several valuable cultural heritage objects was avoided. Archaeological digs were organised to recover artefacts and data from these archaeological sites.

In 1998–2008, field investigations were conducted at 8 districts in the Sakhalin region (Okha, Nogliki, Tymovsk, Smirnykh, Poronaysk, Makarov, Dolinsk and Korsakov). The surveys took place along the route of the pipeline, near the designated re-routing areas, along the existing and planned access roads, construction sites and other infrastructure required for the Sakhalin-2 Project. As a result, about 200 cultural heritage objects, mainly sites and old settlements, were discovered, surveyed, plotted on maps and marked on project planning drawings. The Contractor responsible for the conservation of cultural heritage drew up corresponding protective measures for the CHOs located in areas directly or indirectly affected by the construction work. These measures mainly comprised archaeological digs to recover artefacts and data and monitoring of the sites throughout the construction work.

Monitoring

Given the real possibility of unearthing and damaging ancient objects, which due to their nature, would not be identified from the preliminary surveys, a plan of scheduled archaeological monitoring was prepared. The monitoring was carried out in the areas of high cultural sensitivity, near known archaeological sites, or in areas where the likelihood of making discoveries was high.

In the course of monitoring, CCCH archaeologists oversaw the management of known and newly discovered archaeological sites by designating them as conservation areas. Field surveys of the sites uncovered by earth-moving machines were carried out. The construction personnel were also given advice and instructions in regard to the CHOs.

The monitoring was conducted by CCCH archaeologists and other specialists throughout the period of pipeline construction, including the winter months. Special attention was given to construction management on the areas adjacent to the archaeological sites. Natural features were inspected and conservation areas with cultural heritage objects were demarcated with tape and warning signs.

During monitoring a series of archaeological sites were uncovered. If they were individual archaeological finds or paleontological remains, they were collected and despatched to the Sakhalin State University Museum or the Sakhalin Regional Museum of Local History for further study and safe-keeping. If any archaeological sites of great scientific value were discovered (cultural layers with artefacts and remains of buried dwellings), construction work on that part of the pipeline was suspended, and in the summer months, an immediate archaeological dig was started. Operations of this kind were carried out at the archaeological sites of Venskoye 4 Location 1, Pugachevo 1 Location 3, Slavnaya 4 and Slavnaya 5.

CCCH took an active part in the discussion about possible conservation measures and helped develop solutions, such as re-routing the pipeline. Archaeologists, representatives of Sakhalin Energy and construction contractors worked together to resolve issues of archaeological site conservation.

Recovery digs

Archaeological recovery digs were carried out at those places where it was not possible to re-route the pipeline or where an archaeological site was discovered in the process of the excavations. This work was aimed at preserving material remains and historical information contained in ancient strata, which could reveal the culture, lifestyle and occupations of the ancient inhabitants of Sakhalin Island. A recovery dig involves complete extraction of archaeological information, detailed recording, processing and subsequent comprehensive study.

Archaeological digs were carried out by highly skilled professionals from the Sakhalin State University, Sakhalin Regional Museum of Local History, and other archaeologists from Khabarovsk and Novosibirsk. The work was carried out under

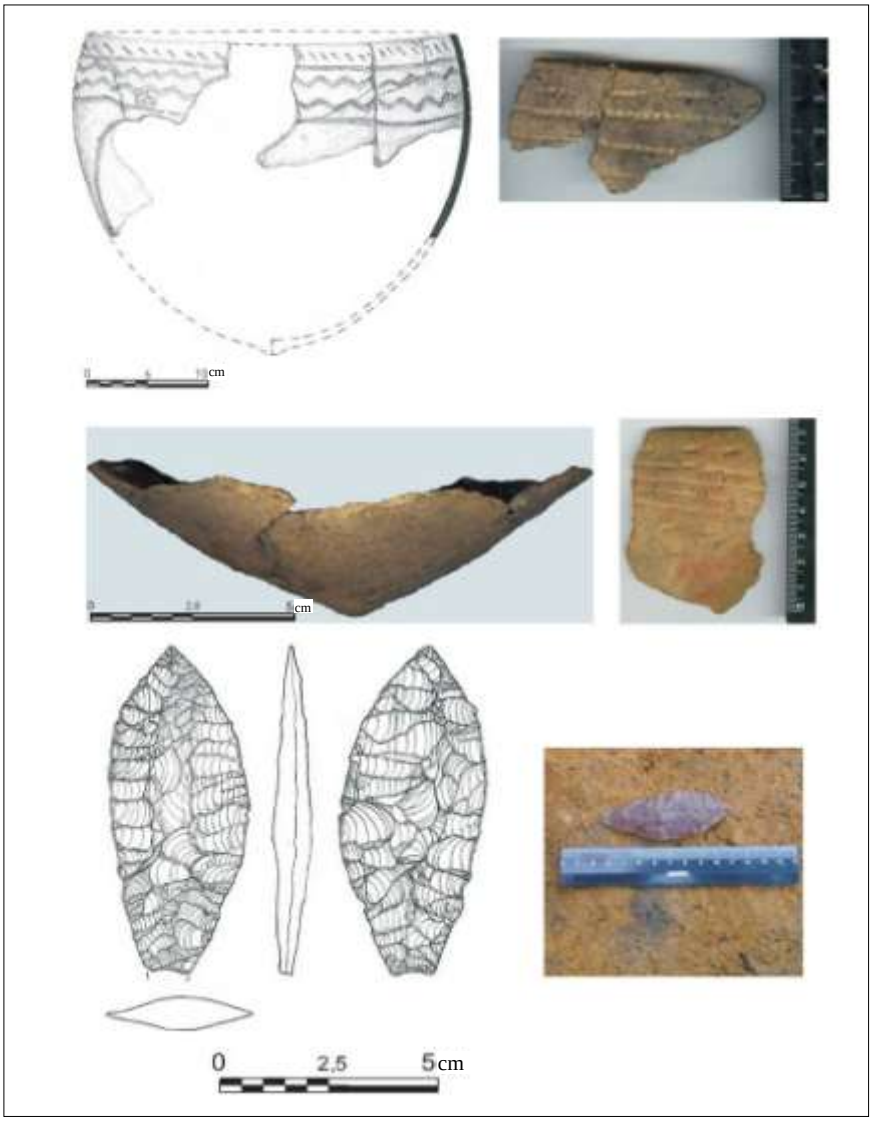
special licenses “Permit for archaeological excavations and surveys” issued by the Institute of Archaeology of the Russian Academy of Sciences. Recovery excavations were conducted at nine cultural heritage sites in the Nogliki, Tymovsk, Makarov and Dolinsk Districts. At archaeological sites of Dzhimdan 5, Nabil 1, Chaivo 6 and Chaivo 26 excavations began before the construction operations and at Venskoye 4, Yasnoye 8, Pugachevo 1, Slavnaya 4 and Slavnaya 5 sites digs were conducted after the ground had been cleared. This was due to the fact that these latter archaeological sites (with the exception of Yasnoye 8) had no external features and were only discovered by CCCH archaeologists during the process of clearing and grading route of the pipeline. During these operations the construction machinery removed the ground surface which revealed ancient artefacts to the archaeologists (stone tools, ceramic fragments). However, it should be said that in most cases the cultural layer, as shown by digs, was preserved intact. Protective measures developed by CCCH and agreed with the Company included suspension of construction work at these sites, performance of recovery digs and construction monitoring near the sites. CHO conservation areas were also set up and demarcated with posts, tape and signs.

The majority of the archaeological sites (about 40) was discovered in the Northern Sakhalin, so it is no wonder that the most of the work was undertaken in Nogliki District.

In summer 2004, an archaeological expedition from Sakhalin State University carried out recovery digs at the ancient settlement of **Dzhimdan 5**, situated on the left bank of the river of the same name, 4 km Northwest of the centre of Nogliki village. The settlement comprised 25 dwellings, three of which were found to be in the path of the pipeline. These were investigated by digs.

All the dwellings were shallow and barely noticeable on the surface. They were circular or rectangular with smooth edges. The dig revealed fireplaces on the floor of the dwellings with charred fragments of bone, one supposes, from birds or small mammals, and charred strips of birch bark. Over 1,600 artefacts were collected including stone tools and ceramic fragments.

For the first time, archaeological material from the early Iron Age (1,000 BC–1,000 AD) was found in large quantities, both in well-stratified cultural layers and in dwelling places.



Most of the ceramic artefacts found by archaeologists were separate fragments of earthenware which had fractured over time or been smashed when the inhabitants abandoned their dwelling place. Sometimes, it is possible to reconstruct ceramic vessels by gluing the individual pieces together. Thus, an item can be restored to almost its original shape as designed by the ancient potter.

Ceramic artefacts are one of the most informative sources which are invariably used to identify the cultures found at archaeological sites of the Neolithic and early Iron Age (Paleometal). Specialists can glean much information about the culture, age and the way of life of the people who made the ceramic vessels by examining their shape, size, colour, firing method, modelling features, clay composition and decorative markings. Indeed, analysis of ceramic artefacts found during excavations at the ancient settlements unearthed during the construction phase of the Sakhalin-2 Project enabled archaeologists to expand and revise their knowledge of ancient Sakhalin.

Some unexpected finds were made in the course of conducting recovery digs at the **Nabil 1** settlement. This archaeological site is located on the right bank of the Nabil River at the intersection of the pipeline, 9 km from the river estuary and 6 km west of the Lunskoye OPF. In thick forest, under fallen trees over 30 ancient dwellings of various sizes and configuration were discovered. Finds included small dwellings hardly noticeable on the existing surface, as well as fairly large and deep pits with signs of an earth mound along their perimeter. Some completely buried ancient dug-outs without any external features, were also found during excavations. The graves of the Ekzain Nivkh family are located at the same site. Graves, both ancient and modern (1980s), are located along the forest edge and adjacent to the boundary of the archaeological site.

In 2004, an archaeological expedition from the Sakhalin Regional Museum of Local History carried out recovery digs at two ancient dwellings which are shown as numbers 4 and 5 on the map of the Nabil 1 ancient settlement.

Judging by its features and the artefacts found there, dwelling 4 belongs to the Okhotsk culture of the early Iron Age, which previously was considered only to exist in Southern Sakhalin. The dwelling turned out to be a semi-buried hexagonal structure, 8 x 5.6 m, with an open hearth in the middle of the floor and a forge located in an annex near the northeast wall. In the cultural layer and on the dwelling floor, numerous ceramic artefacts were discovered primarily comprising large piles of fragmented earthenware vessels.

Some pots decorated and embossed with webs and shapes typical of late Okhotsk culture were successfully reconstructed from the ceramic fragments. Some corroded pieces of iron and glassy material similar to metallurgical slag were found, evidently from the forge. The type of dwelling and the results of radiocarbon dating identified it as a site from the Paleometal age, constructed some 800–1,200 years ago. In the course of the dig, it was revealed that the dwelling was on the site of an earlier Neolithic cultural layer indicative of the Imchin Neolithic culture (4,000–1,000 BC).

Dwelling 5 was significantly different from the previous one: it turned out to be a shallow, half-buried structure, 9m in diameter, with a circular arrangement of support columns and a hearth in the centre of the floor. Many stones and ceramic fragments had accumulated in the cultural layer of this dwelling.
The most interesting and rare finds were a bead carved from stone, part of a figurine and some decorative rings.

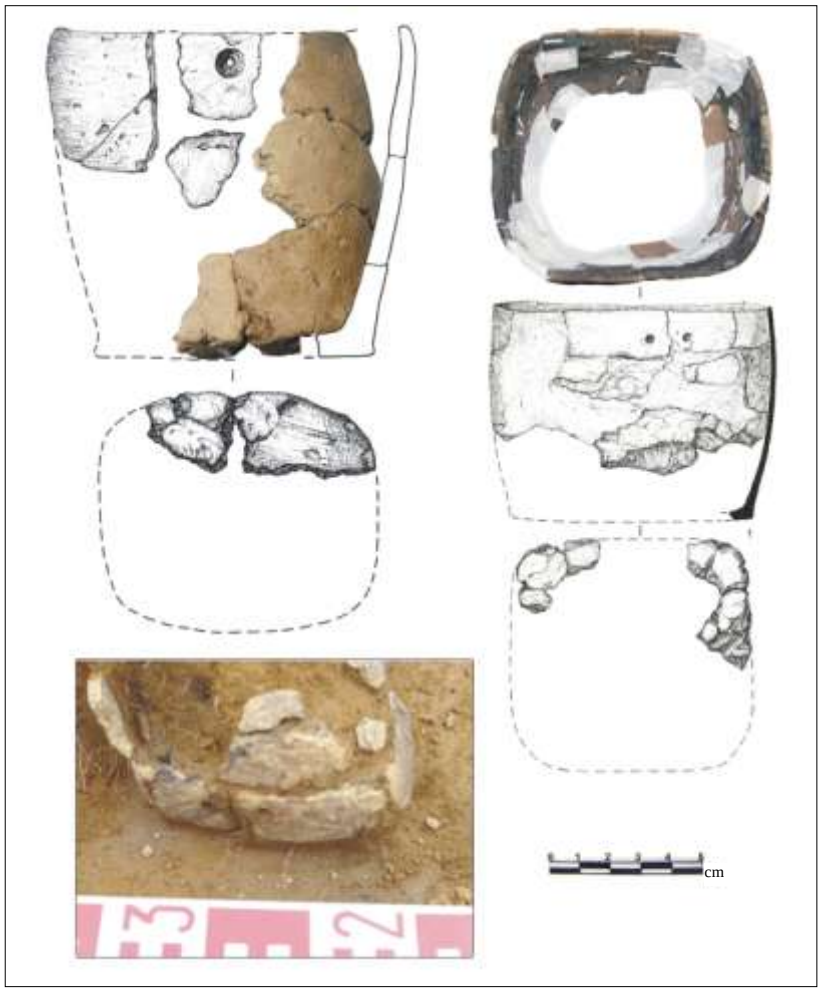
Two types of earthenware were found in and around the dwellings. The first type is characteristic of the Imchin Neolithic culture and is widely found across the whole of Northern Sakhalin. The other type proved to be a real find for the archaeologists. It is a type of earthenware not seen before on Sakhalin but reminiscent of similar Neolithic material found in Yakutia. Possibly, this type of earthenware came to the island with migrants from Eastern Siberia.

The dwellings were dated to the late Neolithic age, 6,600–7,600 years ago, but dwelling 5 was built on an older cultural layer dating back to the early Neolithic age. Finds such as cone shaped stones, micro blades, tools for making macro blades, multifaceted cutting tools and a Gobi micro blade indicate that the dwelling was inhabited by peoples from the Mesolithic and non-ceramic, early Neolithic Age. They also show a correlation between the early Neolithic cultures of Northern Sakhalin and the autochthonous and neighbouring late Paleolith cultures of Southern Sakhalin and the Japanese Islands, Primorye, Priamurye and Yakutia. Thus, in the course of the digging, it was revealed that the Nabil 1 settlement is multi-layer. The different archaeological finds reflect the demographic changes in the population of Northern Sakhalin. The information gleaned from the dig expands and revises current scientific thinking about the genesis and inter-relations of ancient cultures on Sakhalin Island and neighbouring regions[9].

[9] V.O. Shubin Archaeological Studies in the Nogliki District of the Sakhalin Oblast under Sakhalin-2 Project.// Nature, History and Cultural Heritage of the Sakhalin Oblast: Research and Discoveries. Proceedings of the Scientific Conference dedicated to the 110th anniversary of the Sakhalin Museum (1896-2006), Yuzhno-Sakhalinsk, 27-28 November, 2006).—Yuzhno-Sakhalinsk, 2008, pp. 135-168.

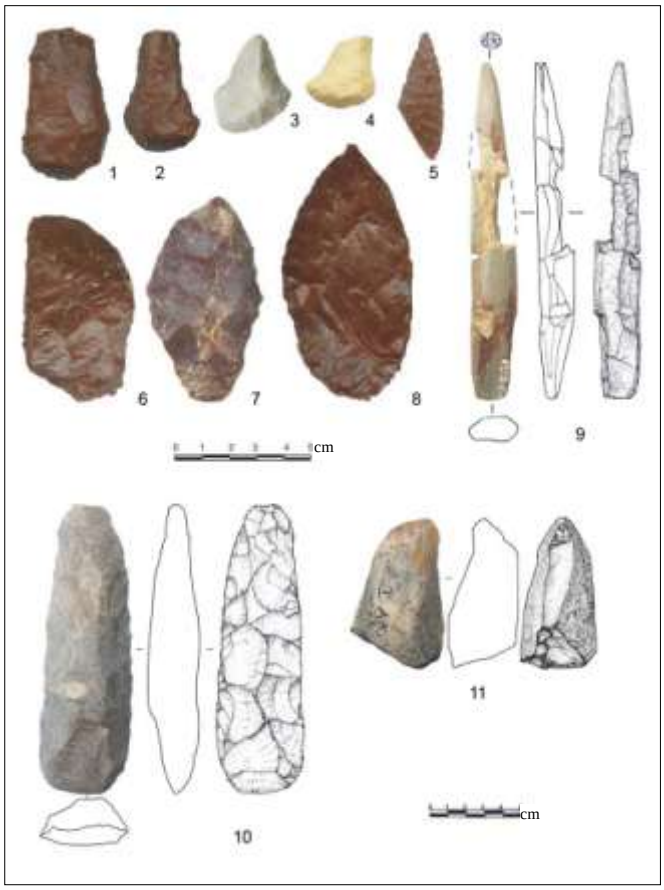
An equally remarkable discovery awaited archaeologists at the ancient settlement of **Venskoye 4**. It was found in 2005 during monitoring of a section of pipeline which had already been laid. The site had been partially damaged by the contractors, but to the west of the pipeline, a substantial part of it was still intact. So it was decided that a recovery dig would be made to investigate the settlement area, prevent further destruction and establish a conservation area.

Archaeological investigations were carried out in June 2006 by an expedition from the Sakhalin Regional Museum of Local History. A fairly deep (up to 50 cm) cultural layer was unearthed during the excavations. No remains of any dwellings were found, but several open hearths were found in small pits. A large number of archaeological finds were recorded as being part of a residential or working site. Two groups of artefacts from different eras were identified. The first group made up the majority of the archaeological finds and is known as the Southern Sakhalin Neolithic culture (SSNC). It is aged between 5,000–7,000 years. Previously, it had been thought that this culture only existed in the south of the island, so the finding a typical SSNC site so far north was a discovery in itself.



One complete vessel and separate ceramic fragments characteristic of Southern Sakhalin Neolithic culture were found in the cultural layer of the site. The ceramic vessel is slightly contoured and has a flat, sub-rectangular base and neck; it is undecorated, but has a series of conical holes just below the rim. The clay used to make the vessel was found to have traces of organic material (cut grass).

The inventory of stone artefacts is represented by an assortment of tools shaped on two sides, a feature which is typical of the late Neolithic Age. The tools were made by fracturing stone and forming the edges of the chippings into a blade. They include weapon heads (arrow tips, darts, and spears), cutting tools (knives, sharp flints), and scrapers. Spindle-shaped stone rods are a characteristic feature of SSNC, whose purpose has not yet been determined. Two such items were found in the course of excavations in the settlement of Venskoye 4. Similar ceramic and stone artefacts found in settlements of Sadovniki 2 in the Kholmsk District and Kuznetsovo 3 in the Nevelsk District of the Sakhalin Oblast give reason to believe that some of the ancient inhabitants of Southern Sakhalin, the Southern Sakhalin Neolithic culture, migrated to Northern Sakhalin. It is quite



possible that some small groups could have migrated some 600 km to the north in search of new land. The districts of Northern Sakhalin are rich in resources[10].

The second group of artefacts found during diggings at the Venskoye 4 settlement is fairly small and does not form any particular concentration of material. In the dig area, several dozen small, ceramic fragments from the early Iron Age were found. Evidently, these were parts of small undecorated vessels with a straight, smooth and slightly inflected rim. Some of the stone artefacts, namely cutting or scraping tools made by fracturing relatively soft stone relate to the ceramic earthenware. Such sites date back to the early Iron Age. Clearly, a small seasonal site existed here for a while. A collection of 850 artefacts found in the course of excavations over an area of some 500 m^2 were sent to the Sakhalin Regional Museum of Local History.

In July 2005, on the planned site of the pig launcher at the Chaivo Bay spit, the **Chaivo 26** site was discovered. A decision was taking to carry out an archaeological dig before the commencement of construction work. In August 2005, excavations were carried out across an area spanning 174 m^2. As a result, two cultural layers were studied representing the tail end of the Neolithic Age and early Iron Age. The investigations revealed that there was no protracted cultural layer and no large buried objects in area. In all likelihood, the area was used on a temporary basis by hunters and fishermen 1,000 to 3,500–4,000 years ago.

In summer 2005, an archaeological expedition from LAR of the Sakhalin State University carried out recovery digs at the ancient settlement of **Chaivo 6**, **Location 2,** where an ancient dwelling was found within the boundaries of the planned route of the pipeline. From the outside, it looked like a bowl-shaped pit of 7 m diameter and 0.5m depth.

[10] V.O. Shubin. Archaeological Studies in the Nogliki District of the Sakhalin Oblast under Sakhalin-2 Project.// Nature, History and Cultural Heritage of the Sakhalin Oblast: Research and Discoveries. Proceedings of the Scientific Conference Dedicated to the 110th anniversary of the Sakhalin Museum (1896-2006), Yuzhno-Sakhalinsk, 27-28 November, 2006).—Yuzhno-Sakhalinsk, 2008, pp. 135-168.

In the course of the dig, it became clear that it was the site of a square hollowed out dwelling place with dimensions of 6 x 6 m. Inside, there was a hearth and some alcoves for sleeping. Some traces of the wooden support structure remained on the floor of the dwelling, including columns and crossbeams. There were also numerous artefacts which showed how the ancient population had spent their time; the artefacts included stone tools, chippings, uncut stone, waste materials, fragments of earthenware and small pieces of coal. The total area of the dwelling was about 35 m^2, and up to 10 people from one family group could live there. A collection of over 800 artefacts, found in the cultural layer of the dwelling, was sent to the Archaeological Museum of Sakhalin State University.

Ceramic artefacts collected from the floor of dwelling places are of great interest to specialists. In the Archaeological Laboratory of Sakhalin State University, scientists managed to restore two roughly modelled, undecorated vessels with a flat bottom and thick walls. These clay vessels had been fired at low temperature. The clay included organic material which resulted in numerous lacunas (small cavities) in the surface of the fragments. At today's date, they are the oldest ceramic artefacts found in Northern Sakhalin. The ceramic material itself has been identified as a special type of organogenic Neolithic ceramic new to Sakhalin and named consequently after the Chaivo-6 archaeological site. Radiocarbon dating of charcoal samples from the hearth and samples of the cultural layer taken along the dwelling wall was carried out by the Geology and Cenozoic Paleoclimatology Laboratory of the Geology Institute of the Siberian Branch of the Russian Academy of Sciences. The laboratory was able to determine the age of this dwelling as being 6,800 to 7,000 years old.[11]

Archaeologists managed to uncover certain material features of the culture of the inhabitants of this ancient dwelling place. Moreover, they found certain similarities to the Neolithic culture of Southern Sakhalin. The geographical position of the site and some other finds (e.g. special knives for gutting fish and a stone shank from a compound fishing hook) demonstrated the inhabitants' reliance on seafood. This was an important innovation for the North Sakhalin population in the early stages of the late Neolithic period.

Digs at the Chaivo 6 dwelling, Location 2, not only led to the conservation of a remarkable archaeological site, but also revealed some valuable new information for studying the ancient cultures of Northern Sakhalin. At the same time, it created new themes and areas of study related to the ancient cultures of Sakhalin Island.

[11] V.A. Grischenko. Archaeological Studies at Chaivo 6 Location 2 Site in the Nogliki District of the Sakhalin Oblast // Proceedings of Sakhalin State University. Issue 7. Yuzhno-Sakhalinsk, 2008. — pp. 26-37.

The most “mysterious” object found by archaeologists during the Sakhalin-2 Project was in the central part of Sakhalin Island, 5 km northwest of Yasnoye village in the Tymovsk district. It is near a 50m summit of the West-Sakhalin mountains at the watershed of two tributaries of the Tym River. Due to the proximity of the pipeline to the archaeological site known as Yasnoye 8, a decision was taken to carry out an archaeological dig. Before the commencement of excavations, the structure was a collapsed, rectangular pit with dimensions 22 x 19 m and depth of 20–50 cm. It was surrounded by an embankment formed as part of the original construction. Standard dwellings of the Neolithic Age and the early Middle Ages are 6–8m in size and range from 3 to 15m across. However, the size of this pit is too large for a standard dwelling. Other structures of similar size and appearance were found in other archaeological sites on the island, but no serious investigations into their nature have been carried out so far.

Excavations of **Yasnoye 8** settlement were carried out in summer 2006. Over a period of 45 days an archaeological expedition from Sakhalin State University surveyed 840 m^2 of cultural layer. Approximately 500 m^3 of soil was excavated manually to enable a thorough study of the ground. The archaeologists were unable to find any evidence of the distinctive post holes typical of standard dug-out dwellings. They concluded, therefore, that there had been no roof over the pit. A large fire place was unearthed in the centre of the structure. There was a large open hearth with a cluster of pebbles which could have been used for boiling water in vessels. A substantial spread of coal particles and calcined sand over the floor of the pit confirmed the theory that there had been no roof over the hearth. Piles of

ceramic artefacts were found under the walls of the pit and other areas were identified where stones had been split, possibly for tool making. These were types of production areas. Some axes, arrow tips, augers, a shaped knife and scrapers were found along with numerous amorphous chippings, which were evidently used as simple tools.

Ceramic artefacts in the form of broken vessels and fragments were found mainly along two walls, the "shoulders" of the pit. Often they were to be found in small cavities. Ceramic vessels used by the inhabitants of this dwelling were made using the technique of band and ring clay modelling with the addition of fine grain sand. The modelled clay was then fired in a bonfire at relatively low temperatures. Some of the vessels have fingerprints on their exterior, which were left in the process of compacting the walls. An interesting regional peculiarity is the use of naturally-occurring black tar for restoring cracked vessels. Vessels were flat-bottomed and were made in various shapes and with different rims. The special style of ceramic artefacts led the archaeologists to classify the ceramic artefacts as "Tym ceramics". They were dated from the end of the 2nd millennium to the first half of the 1st millennium BC. Tym ceramics can be found at many sites all over Sakhalin. The nearest of them is the Yasnoye 7 settlement which is located only 800m away in a south easterly direction along the route of the pipeline. Similar ceramic materials were also found at the Venskoye 4 settlement in the Nogliki District. Using charcoal samples collected from the hearth, a series of radiocarbon dates were obtained, confirming that the "Tym ceramics" were produced in the first half of the 1st millennium BC.[12]

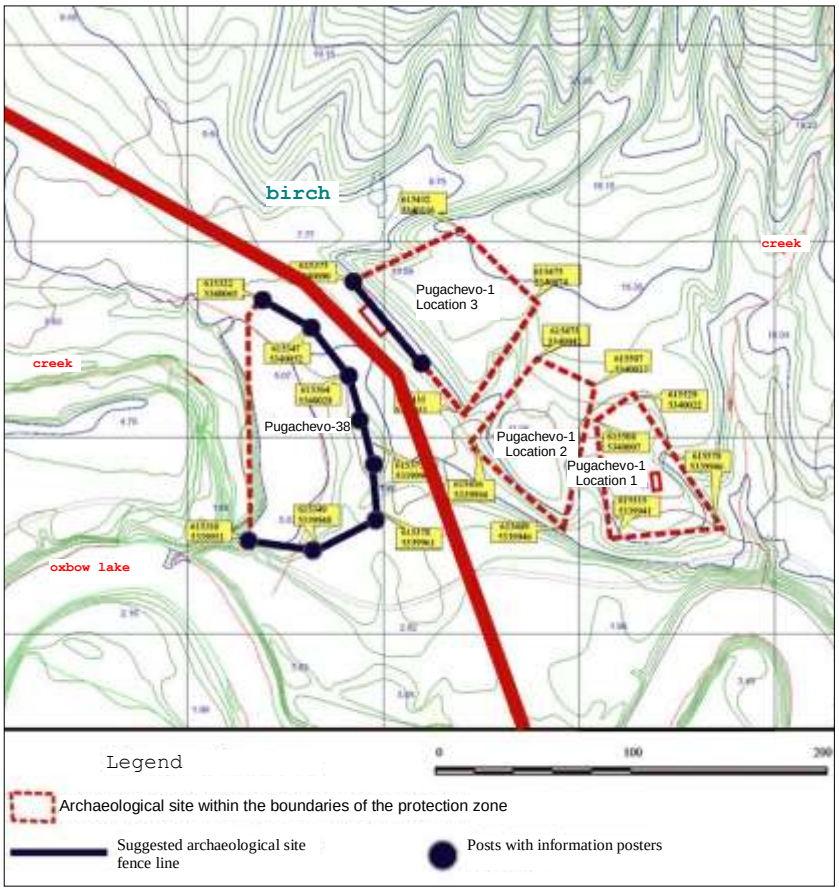
In the course of the dig, several theories were developed about the purpose of the structure. Based on the topography of the site, its design features and the results of excavations, the researchers proposed two versions:
1. The site was a mountain refuge used by the inhabitants of the nearby settlement.
2. The site was a sanctuary or a place for ritual ceremonies held by the ancient population. In as much as the fireplace was larger than those found in previous studies, it is possible that the site was used as a crematorium.

A collection of artefacts found in the course of the dig across an area of around 840 m^2 amounted to 3,500 artefacts. These were sent to the Archaeological Museum of Sakhalin State University.

[12] V.A. Deryugin. Preliminary Results of the Studies at Yasnoye-8 Site under Sakhalin-2 Project. // Archaeological Studies of the Transitional Period from the Neolithic to Iron Age in the Russian Far East. Ed. T. Kumaki and M. Fukuda.—Tokyo: Tokoro Laboratory of the Tokyo University, 2007, pp. 39-47.

In Southern Sakhalin, recovery digs were carried out at the ancient sites of Pugachevo 1, Slavnaya 4 and Slavnaya 5. These archaeological sites have no obvious surface features. The only evidence of archaeological artefacts was the small amount of material found during monitoring of the cleared ground. The preserved cultural layer of the sites contained a large quantity of artefacts from the early Neolithic Age, aged 8,000–9,000 years.

The valley of the Pugachevka River and neighbourhood of Pugachevo village in the Makarov district are two places with the largest concentration of archaeological sites. Over 40 ancient sites can be found here. In the area of operations under the Sakhalin-2 Project alone, there are 5 ancient sites and settlements: Pugachevo 1 (Locations 1 to 3) , Pugachevo 41 and Pugachevo 20 fortified settlement, Pugachevo 38 and 43 settlements with dwelling pits.



Archaeologists in cooperation with design engineers did a great deal of work in routing the pipeline and other project infrastructure away from the archaeological sites. Thus, the route of the pipeline bypasses the sites of Pugachevo 1, 20, 38 and 43. CHOs were identified and the bunkering areas and construction camps were moved away from these sites. Moreover, an access road was diverted away from the site of Pugachevo 41.

However, in June 2005, during pipeline monitoring near a conservation area in the northern part of Pugachevo 1 site (Location 3), a low lying relief of a site was discovered with no external features.

The location was identified as a site belonging to the upper Paleolithic–early Neolithic Age and was named Pugachevo 1, Location 3. Since sites which cross from the Paleolithic to the Neolithic Age, as well as the sites of the early Paleolithic Age are amongst the most important archaeological finds on Sakhalin, it was decided to carry out recovery digs directly in the path of the pipeline before the commencement of trenching and pipe laying.

Digs were made in July 2005 by an archaeology expedition from Sakhalin State University. The excavated area of Location 3 of **Pugachevo 1** site covered about 5,000 m^2. Excavations were made on a part of the site (220 m^2 area) affected by the development. Analysis of the strata enabled the archaeologists to conclude that

the excavation unearthed the shore of an early Holocene bay. A large collection of stone artefacts were collected, including tools, uncut stone and production waste. The total number of artefacts amounted to some 1,500 items.

Studying the types of tools, two sets of artefacts were identified, which correspond to the population development at this part of the site in ancient times. The character of the artefacts from this site (namely, the prevalence of wood processing tools, missile tips, small quantities of ceramic artefacts and waste, i.e. stone processing waste) as well as evidence found in strata deposits show that the excavation had uncovered a part of the ancient coastal development area of the early Neolithic Age. Using the collected artefacts and materials from other early Neolithic sites, an in-depth study was carried out in relation to particular aspects of the stone processing industry, namely its functional application and patterns of tool usage, for example, tools designed for wood processing.[13] The sites nearest to Pugachevo 1, when considering geographical proximity and stone processing technology, were found by researchers to be the early Neolithic Age of Sakhalin and Hokkaido. This enabled researchers to date the finds based on arrow tips technology from 7,500–9,000 years of age.[14]

A significant contribution to the study of the early Neolithic Age on Sakhalin was made by studying two more archaeological sites, **Slavnaya 4** and **Slavnaya 5.** These were found in the course of archaeological monitoring of clearance work along the route of the pipeline in 2005 in the Dolinsk district, 2.5 to 3 km south of Dudino railway station. Material was collected on the cleared areas of the route and a small survey excavation was commenced on the site of Slavnaya 4. This excavation revealed the presence of an ancient cultural layer and led the archaeologists to draw certain conclusions about the age and scientific significance of the archaeological site. In 2006 and 2007 a recovery dig at the sites of Slavnaya 4 and Slavnaya 5 was carried out by an archaeological expedition from Sakhalin State University. Both sites are located on the edge of what remains of a 10–15m terrace on the eastern coast of Sakhalin. The sites were actually situated on an ancient sea or lagoon shore because when they were inhabited, the sea level was much higher than today, and the climate—warmer.

[13] V.A. Grischenko. Wood Processing Tools in the early Neolithic Age on Sakhalin (Materials from field surveys in 2005) // Nature, History and Cultural Heritage of the Sakhalin Oblast: Research and Discoveries. Proceedings of the Scientific Conference dedicated to the 110th anniversary of the Sakhalin Museum (1896-2006). Yuzhno-Sakhalinsk, 27-26 November, 2006, Yuzhno-Sakhalinsk, 2008.—pp. 127-134.

[14] V.A. Grischenko. Recovery Excavations of the early Neolithic Coastal Development Zone at Pugachevo 1 Site (Sakhalin Island). North Asia in the Anthropogenic Period: Man, Paleotechnology, Geoecology, Ethnology, and Anthropology. All-Russian Conference with International Participation dedicated to the 100th Anniversary of Mikhail Mikhailovich Gerasimov. Vol. I. Irkutsk. 2007.—pp. 179-186.

In 2005 and 2006, four excavations at the site of Slavnaya 4 were commenced to a depth of up to 1 m and covering a total area of 726 m^2. A cultural layer and buried dwellings were unearthed. A large collection of artefacts were found and classified into two types. The first type is from the early Neolithic Age and is characterised by the arrow tip technology. For the first time in Sakhalin archaeology at the Slavnaya 4 site, two dwellings were dated from samples of coal found in one of them to 7,300–7,500 years, which was the earliest stage of human settlement. In addition to the diverse range of stone tools (flint) and other tools brought from Hokkaido (obsidian), a few fragments of early Neolithic ceramics were found; their unique feature is the mollusc shell imprints on the base of the vessels.[15]

The second type relates to the Southern Sakhalin Neolithic culture (Sony culture). A buried dwelling found in the process of clearing also relates to it, but its design is different from that of SSNC standard dwellings. In particular, the pit typically found in all Neolithic dwellings on Sakhalin is missing. It turned out that the structure was a framed shelter with two earth walls cut into a terraced slope. Along the walls on the floor of the dwelling there was a shallow trough, probably, for water drainage, an oval-shaped open hearth was shifted from the centre of the dwelling to the northwest corner. Near the

[15] Scientific Report on the Works of Unit No. 2 of the Archaeological Expedition of Sakhalin State University in 2006. Vol. 3. Recovery Excavations at the Slavnaya 4 Settlement. Excavation No. 2. Sakhalin-2 Project.—Scientific Archive of LAR of Sakhalin State University, Sakhalin Energy.

hearth, a complete vessel of SSNC was discovered set upside down. On the floor and in the inter-dwelling space, pits were found which meant that it was possible to restore the framework comprising posts and rafters which supported the roof and which protruded southward beyond the boundary of the pit cut into the terraced slope. Several household pits (1m and more in diameter) have been cleared. The household pits are located both inside and outside the dwelling. According to ethnographic data, such structures were used, for example, for pickling fish. Charcoal from the hearth was used for radiocarbon dating. The dating determined that the dwelling had been used about 6,000 years ago.[16] Over 8,000 artefacts were collected during excavation of the Slavnaya 4 settlement. They were sent to the Archaeological Museum of Sakhalin State University.

In March 2006, the pipeline was laid across the archaeological site under the supervision of CCCH who ensured that there was minimal impact on the archaeology.

Excavations over an area of 342 m^2 at the **Slavnaya 5** site were carried out by an archaeological expedition from Sakhalin State University in the field season of 2006 – 2007. Slavnaya 5 became another one of Sakhalin's stratified sites from the early Neolithic Age. As a result of the excavations, a model collection of arrow tip technology for Southern Sakhalin was obtained.[17]

[16] Scientific Report on the Works of Unit No. 2 of the Archaeological expedition from Sakhalin State University in 2006 . Vol 4. Recovery Excavations at Slavnaya 4 Settlement. Excavation No. 3. Sakhalin-2 Project. —Scientific Archive of LAR of the Sakhalin State University, Sakhalin Energy.

[17] V.A. Grischenko. Results of the First Season of Excavations at the early Neolithic Site of Slavnaya 5 // Sakhalin and the Kurils: History and Modern Time. Proceedings of the Regional Research and Practice Conference (27-28 March, 2007). Yuzhno-Sakhalinsk, 2008.— pp. 288-296.

The assortment of tools from the site mainly comprise tools for making medium, small and long blades. The raw materials for blade production are both local rocks — hornfels, flint, and, to a large extent, obsidian brought from Hokkaido. Cutting tools comprise axes and adzes of unilaterally and bilaterally concave shapes, as well as flattened shapes. A special group is made up of polished stone rods with grooves at the ends, which seem to have been used as fishing net weights or shuttles for weaving nets. It may be evidence of the coastal tradition of the early Neolithic population of the island. A special find is a decoration in the form of a polished ring made of a rock of greenish colour. This decoration, though being quite a rare find, has similarities with finds from other early Neolithic settlements on the island (Nabil 1 settlement, Location 2, in the north of Sakhalin) and the adjacent territories (Yubetsu Ichikawa site, Hokkaido). In addition to the stone products, the site inventory includes fragments of ceramic vessels of two types which correlate with two cultural traditions from the early and late Neolithic Age. The processing technology at the site finds similarities with the previously investigated sites of the early Neolithic Age and at Hokkaido.

The collection of artefacts found in the course of excavations at the Slavnaya 5 site comprise over 1,000 items. They have been sent to the Archaeological Museum of Sakhalin State University for safe-keeping. A scientific report and a series of publications have been written based on the results of the excavations. [18]

[18] Scientific Report on Works of the Archaeological Expedition of Sakhalin State University. Recovery Excavations at Slavnaya 5 Settlement in the Dolinsk District of the Sakhalin Oblast in 2006. Sakhalin-2 Project. —Scientific Archive of LAR of Sakhalin State University, Sakhalin Energy.
V.A. Grischenko, A.V. Mozhaev. Excavations of the early Neolithic Site of Slavnaya 5 on Sakhalin Island in 2006. Problems of Archaeology, Ethnography, Anthropology of Siberia and Adjacent Regions. Proceedings of the annual session of the Institute of Archaeology and Ethnography of the Siberian Branch of the Russian Academy of Sciences 2006.—Novosibirsk: Novosibirsk: Publishers of the Institute of Archaeology and Ethnography of the Siberian Branch of the Russian Academy of Sciences, 2006. Vol. XII, Part I, pp. 55-59;
V.A. Grischenko Early Neolithic of Sakhalin Island (on Historical Background) // Proceedings II (XVIII) of All-Russian Archaeological Conference in Suzdal. V.I.—M.: Institute of Archaeology of the Russian Academy of Sciences, 2008.—pp. 206-208.

Summarising the recovery operations at the archaeological sites within the construction area of the Sakhalin-2 Project, the unprecedented scale of conservation measures must be noted. Within four years (2004–2007), archaeological recovery digs were carried out at 9 ancient sites and settlements. Their area exceeded 3,500 m^2, and the volume of excavated soil from the cultural layers of ancient monuments, which passed through the archaeologists' hands amounted to around 2,500–3,000 m^3. In the course of excavations almost 30,000 artefacts were collected and delivered for safe-keeping to state repositories.

Summary Table of Archaeological Digs and Collected Artefacts

No.	Archaeological site	Year of excavation	Excavation area (m^2)	Number of finds (pcs)	Storage location
1	Dzhimdan 5	2004	302	1,632	Sakhalin State University
2	Nabil 1, Location 2	2004	250	2,962	Sakhalin Regional Museum of Local History
3	Chaivo 6, Location 2	2005	168	823	Sakhalin State University
4	Chaivo 26	2005	174	374	Sakhalin State University
5	Pugachevo 1, Location 3	2005	220	1,475	Sakhalin State University
6	Slavnaya 4	2005–2006	726	8,091	Sakhalin State University
7	Slavnaya 5	2006–2007	342	1,108	Sakhalin State University
8	Yasnoye 8	2006	848	3,484	Sakhalin State University
9	Venskoye 4, Location 1	2006	494	865	Sakhalin Regional Museum of Local History
Collection of artefacts in the course of monitoring and surveys				7,548	Sakhalin State University
Paleontological remains				53	Sakhalin State University, Sakhalin Regional Museum of Local History
Historical objects				80	Sakhalin State University, Sakhalin Regional Museum of Local History
Total area of excavations and number of finds			3,524 m^2	28,495 items	

Invaluable results have been obtained. Some 200 new archaeological sites have been discovered, described and made available for scientific research. The results of the research have been detailed in dozens of scientific reports and articles, presented in speeches at regional and international conferences, exhibited in museums and used as a basis for two dissertations. The fundamental discoveries revealed valuable new information, enabling the study of the archaeological cultures of Sakhalin. Moreover, existing theories about the ancient history of the island have been largely revised as a result of these discoveries. Thanks to research from the Sakhalin-2 Project, Sakhalin's archaeology has been given a powerful stimulus for future development.

Monitoring of Historical Monuments

Historical monuments on Sakhalin form the second largest group of cultural heritage objects after archaeological sites. The route of the pipeline on the Sakhalin-2 Project was originally designed to bypass any historical monuments. Nevertheless, the monuments were monitored throughout the construction stage. The results of archive searches and field investigations into historical monuments along the route of the pipeline were published in 2008 with financial support from Sakhalin Energy.[19] In a book by I.A. Samarin titled "Preserved Memory", readers will find interesting information about monuments, objects, landscapes and places of interest, where significant events in the history of Sakhalin Island occurred in the 19–20s centuries. And in 2005–2008, the Sakhalin-2 Project pipeline was laid.

Without retelling the contents of the book, let us mention just a few of the most interesting sites, as well as those where conservation work was undertaken.

In the Smirnykh District the route of the pipeline crossed the areas where in the final stage of World War II, on 11–18 August 1945 fierce fighting took place between the soldiers of the Soviet Army and the Army of Imperial Japan. Following the decision by the Executive Committee of Sakhalin Oblast Council of Workers' Deputies No. 324 of 11 July 1978, the area between the villages of Roshchino and Pobedino was declared a memorial site (historical landscape) of regional importance. Thus, having special importance to the history and culture of the Sakhalin Oblast as a constituent entity of the Russian Federation, it was listed in the objects of conservation sites having historical, architectural, scientific and memorial value.

In the course of monitoring field operations at this historical site, a thorough survey of all its constituent parts was made. This included mapping of the site and detailing structures such as the Haramitoge (Koton) fortifications built by the Japanese and war memorials (military cemeteries, monuments and memorials built during and after the war). The documents prepared as a result of the research comprise lists and a map of 19 fortifications and 16 memorials. Conservation operations were organised and carried out on two of them.
A permanent fire position (pillbox) which was part of the Japanese Haramitoge fortified defence system appeared to be situated directly in the path of pipeline at 209 kilometres from its start. This structure is a double-casement, double-embrasure machine-gun nest.

[19] Samarin I.A. Retained Memory. Yuzhno-Sakhalinsk: Lukomorye, 2008.—p. 92.

In terms of its dimensions and reinforcement, it is the largest permanent structure along the main battle line of the Haramitoge fortifications and it occupied a strategic position. It had a line of fire covering the road running across marshland from Harami-Toge to the Povorotny river and the open space in front of the northern mountain peaks. A mortar emplacement is located 180 m northeast of the pillbox. So these two positions could maintain crossfire over the northwest sector of the battalion's defensive position on the Obzornaya Mountain.

On 16 August 1945, in the course of military operations for the capture of the Haramitoge fortifications, the pillbox was overrun and destroyed by soldiers of No. 192 chemical defence company of the No. 79 rifle division.[20] Despite its state of repair (which is, however, historically accurate), the pillbox is a valuable cultural heritage object, as it is:

- a monument of Japanese fortification from the 20th century,
- evidence of the fierce fighting between Russian and Japanese troops during the final combat operations of World War II, and
- an integral part of the historic landscape.

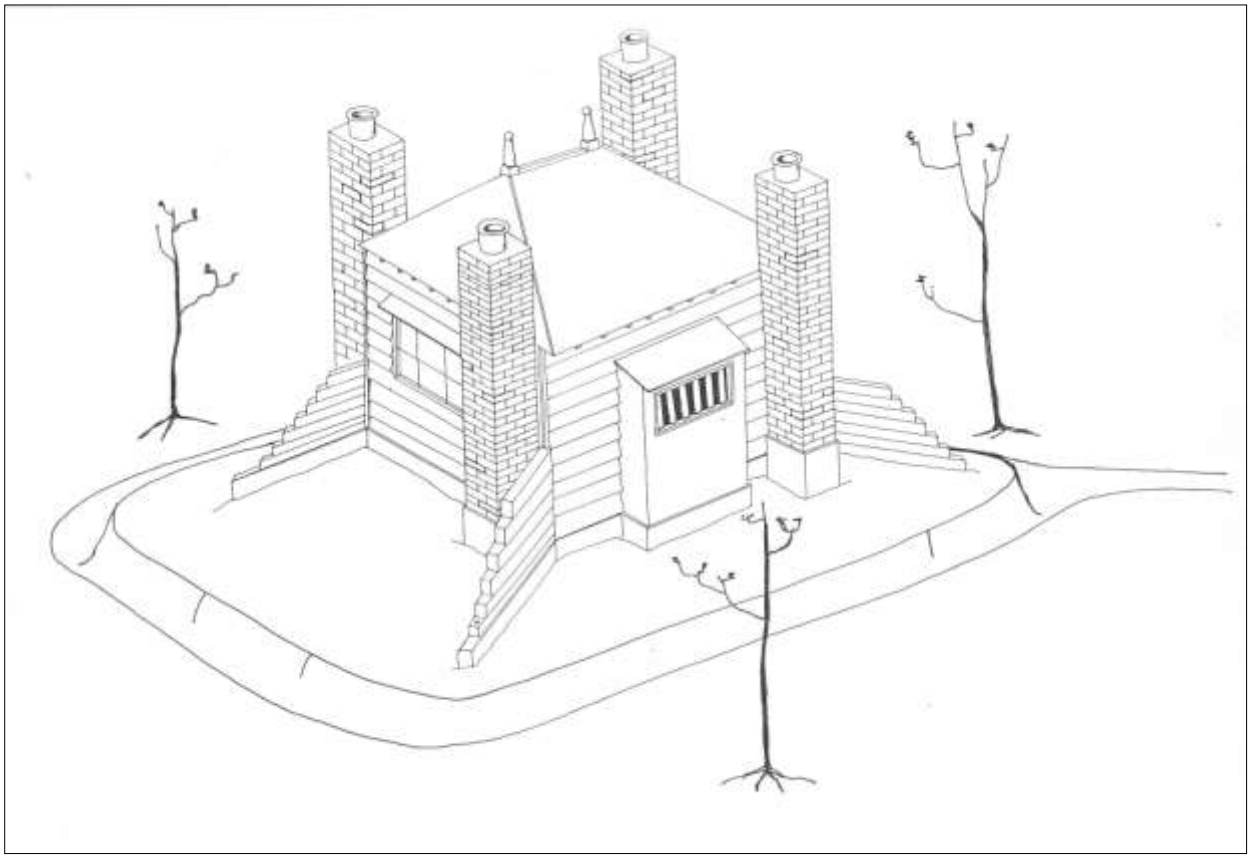
[20] I.A. Samarin. Retained Memory. —pp. 48-49.

So, it is not something to demolish or remove. Rather, it must be conserved in its original position. With this mind, a recommendation was made to re-route the pipeline around this site. This recommendation was carried out in 2004, and in summer 2005, fencing was placed around it, demarcating it as a conservation area. Further reinforcement of the site was provided by building an embankment of earth and logs.

The CHO "Scene of Fierce Fighting between Roshchino and Pobedino in August 1945" includes, in addition to the fortifications, a series of monuments erected after 1945 on sites of battle. One of them is the Russo-Japanese Monument to the Victims of World War II. It appeared to be endangered because a small forest path in the vicinity had come to be used as an access road to the pipeline. Plans for its expansion to facilitate the movement of heavy vehicles jeopardised the monument. A project for improvements to the adjacent area was developed and implemented so that the road would bypass the monument.

Various household items and tools from the period of Karafuto government (1905–1945) are of some historical interest and exhibition value. They were found by representatives of the contractor for mines clearance, Emercom Demining Company, during the clearing operations along the route of the pipeline. For example, a Japanese sickle “kama” was found in one of the collapsed trenches of the Haramitoge fortifications. Supposedly, it had been used by soldiers of No. 125 regiment of no. 88 infantry division for clearing lines of fire during military operations in August 1945. A collection of Japanese household bone china with military symbols owned by soldiers of the Haramitoge garrison is also a remarkable find.

In 2004, some ruins of an unknown concrete and brick structure were found 1.5 km north of Gastello village on the right bank of the Chernushka River, 50 m north-west of the route of the pipeline. A survey conducted in 2005 identified this site as the remains of a Japanese army look-out post used for surveillance and communication. It was built by soldiers of the Karafuto composite brigade of No. 7 infantry division from Asahigava (Hokkaido) in 1939–1943. The survey meant that the site could be reconstructed on paper.



The concrete foundation of the structure has pronounced angular buttresses which are a characteristic feature of Japanese military structures in this district. A concrete platform where the communication equipment was evidently located adjoins the south-western side of the foundation. Along the perimeter of the structure there is square ditch of about 1.5 m width. It exits to the north. The

foundations of external stove chimneys made in concrete blocks (a typical building material used for construction of almost all military camps in the Southern Sakhalin) are located at the corners of the external foundations. The unusual structural layout and its relative integrity give grounds for it to be called a site of historical and cultural value, requiring conservation.

In the course of reconnaissance and monitoring along the route of the pipeline, remains of Soviet military field camps of the 1940s were found in the Tymovsk district on the banks of the Taulan and Golubichnaya rivers (remains of trenches, rifle pits and dug-outs). Also, there was evidence of incomplete construction work from the Onor fortified defences partially built by the units of No. 79 division.[21]

Another remarkable historical site is situated in Korsakov district, near the LNG plant. It is the remains of earthworks from a military field camp. Dug-outs, communication trenches and rifle pits have been found along the Mereya river valley. The exact date of construction and whose it was have not yet been established: probably, it was built at the end of the 19th—beginning of the 20th century or after the war in 1940–1950s. The remains of Japanese Kami Kasiho village have been found in the Makarov district, on the banks of the Lozovaya River along with Japanese household items dating to the 1930–40s (a habiro axe, rakes, pieces of household chinaware, bricks of local manufacture, etc.). Also a Russian iron from the first half of the 20th century was found. Although these finds are not considered cultural heritage objects, they are of some interest in terms of history and local tradition.

Exhibitions and Publication of Results

To publicise the work on the conservation of cultural heritage objects discovered during the Sakhalin-2 Project, one permanent and four mobile exhibitions were arranged and used as training and educational aids. The first exhibition of preserved cultural heritage objects from the Sakhalin-2 Project was created in 2006 by a group from the LAR of Sakhalin State University (A.A. Vasilevsky, V.D. Fedorchuk and V.V. Ovchenkov).
Covering the results of almost three years of conservation work (2004–2006), it comprised 5 presentation boards and two exhibition panels. Maps, diagrams and photos were set out on the boards. They showed recovery digs, monitoring work, site conservation, etc. Actual specimens of ancient artefacts—stone tools and ceramic earthenware, as well as cultural remains belonging to the native peoples of Sakhalin were also exhibited. The materials were provided with annotations in Russian and English. The exhibition was displayed at two offices of Sakhalin Energy, and then taken around the construction camps and towns of Sakhalin. Residents of Nogliki, Val, Onor, Pobedino, Smirnykh, Tumanovo and Sokol villages were able to see the archaeological discoveries and learn about the

[21] I.A. Samarin. Retained Memory. —pp. 18-24.

conservation of monuments restored and protected during the Sakhalin-2 Project.

Employees of Sakhalin Regional Museum of Local History arranged an exhibition based on the results of the monitoring of the LNG plant construction site and the adjacent pipeline. Some original artefacts found on the future construction site were displayed there. They included ancient stone tools, fragments of earthenware of Japanese origin, household items belonging to Japanese settlers of the 1930–40s and Russian settlers of the middle of the 20th century. There were also two large eye-catching exhibits—stone pillars with hieroglyphics each about 1.5 m of high.

One of them was a concrete triangulation tower (reference point) installed in the days of the Karafuto governorship and used for topographical surveys in road-building. The other was a boundary sign made of light-grey granite designating a place controlled by the Ministry of Land Forces. Both items have great historical value. Besides these, the exhibits included a small paleontological collection gathered during monitoring. The exhibition was shown at museums in Korsakov and Yuzhno-Sakhalinsk, as well as in the Training Centre at the LNG plant.

The permanent exhibition of cultural heritage objects found during the Sakhalin-2 Project opened in 2006 at the Archaeology Laboratory of Sakhalin State University. Subsequently it became part of the Educational Museum of Archaeology of Sakhalin State University.

The exhibition of preserved cultural heritage objects found during the Sakhalin-2 Project in the Educational Museum of Archaeology of LAR, Sakhalin State University. 2007.

In the photo (from left to right):
A.A Vasilevsy, Doctor of History, Professor, Head of the Contracting Company for Conservation of Cultural Heritage, Sakhalin Energy;
B.R. Misikov, Doctor of Economics, Rector of Sakhalin State University;
Tim Hake, Production Director of Sakhalin Energy.
10 October 2008.

The official opening ceremony for the Educational Museum of Sakhalin State University was held on 10 October 2008.

An updated version of the mobile exhibition was prepared in 2007–2008. It comprised four units each with different content (relating to districts or sections of the pipeline). Each one reflected the cultural heritage of the district where it was shown, i.e. it displayed information on the archaeological sites along with

ethnographic and historical objects which had been discovered and studied in each district. The various conservation measures associated with each of them were described.

Setting up a mobile exhibition called Conservation of Cultural Heritage Objects found during the Sakhalin-2 Project in the library of Pobedino village. 2007.

Archaeological digs at sites which had been discovered directly on the route of the pipeline and photos of artefacts found are displayed on exhibition stands including ceramic vessels and stone tools. Drawings, photos and graphic reconstructions give an idea of the life and occupations of the ancient population of Sakhalin Island, their manufacturing techniques using ceramic and stone and their methods of hunting and fishing.

After showing the exhibitions at the construction camps, they were presented to the Departments of Culture of Nogliki, Smirnykh, Poronaysk and Dolinsk districts.

Mobile exhibition called Conservation of Cultural Heritage Objects found during the Sakhalin-2 Project in the Local History Museum of Nogliki village. 2007.

Work carried out by CCCH in the conservation of historical and cultural monuments identified during the Sakhalin-2 Project has been covered by the press in some detail. Throughout the project a series of briefings and interviews took place with representatives of the press from Sakhalin Oblast . These included visits to sites where archaeological digs were taking place. On more than 50 occasions, information about the work of Sakhalin archaeologists, who took part in the Sakhalin-2 Project, appeared in the press (newspapers, radio, TV, internet).

A group of representatives from the press at excavations of Slavnaya 4 site. Interview with A.A. Vasilevsky, Head of CCCH, archaeologist, Doctor of History. July 2006.

Reports on the results of work of archaeologists and historians concerning the study and conservation of cultural heritage, within the framework of the project, were presented at 7 Scientific Conferences in Russia and abroad.

Participants of the Conference on "Archaeology of Sakhalin, Research and Practical: Yesterday, Today, Tomorrow" (Nogliki, April 2006.). The report is written by V.D. Fedorchyuk, member of CCCH.

A.A. Vasilevsky, Doctor of History, is speaking at the conference "The Nature, History and Cultural Heritage of Sakhalin Oblast: Research and Discoveries". (Yuzhno-Sakhalinsk, November 2006).

Research material from the Sakhalin-2 Project has been published in a series of articles in Russian, English and Japanese. They include monographs and dissertations.

The List of Scientific Publications,
Covering Results of Archaeological and Historical Investigations
within the framework of the Sakhalin-2 Project

1. A.A. Vasilevsky. Sakhalin Island Stone Age. Abstract of the Thesis for Academic Degree of Doctor of History. —Novosibirsk, 2003.
2. A.A. Vasilevsky, V.A. Grischenko, P.V. Kashitsyn, V.D. Fedorchuk, E.V. Berseneva, A.V. Postnov. Current Archaeological Studies on Sakhalin (2003–2005). – VI-th Annual Meeting of the Research Association of North Asia. —Tokyo: Tokyo University Press, 2005, pp. 11–18.
3. A.A. Vasilevsky. Archaeological Laboratory at University. Higher Education in Russia. Issue —No. 12.—2005. —pp 67–71.
4. A.A. Vasilevsky, V.A. Grischenko, P.V. Kashitsyn, V.D. Fedorchuk. Protective Archaeological Studies and Conservation during the Oil and Gas Projects on Sakhalin in 1996–2006. // Problems of Archaeology, Ethnography, Anthropology of Siberia and Neighbouring Regions. Materials from the annual session of the Institute of Archaeology and Ethnography of the Siberian Branch of the Russian Academy of Sciences 2006, vol. XIII). Novosibirsk: Institute of Archaeology and Ethnography of the Siberian Branch of the Russian Academy of Sciences Publishers, 2006.—pp. 500–503.
5. A.A. Vasilevsky. Sakhalin Island Stone Age. Yuzhno-Sakhalinsk: Sakhalin Book House, 2008.—412 p.
6. A.A. Vasilevsky. Sakhalin Archaeology and Ethnography Laboratory of the Archaeology and Ethnography Institute of the Siberian Branch of the Russian Academy of Sciences and the Sakhalin State University: Past, Reality, Perspectives as Seen in 2006 // Nature, History and Cultural Heritage of the Sakhalin Oblast: Research and Discoveries. Proceedings of the

Scientific Conference dedicated to the 110th anniversary of the Sakhalin Museum (1896–2006). Yuzhno-Sakhalinsk, 27–26 November, 2006, Yuzhno-Sakhalinsk, 2008.—p. 122–126.
7. V.A. Grischenko, A.V. Mozhaev. Excavations of Slavnaya 4 Settlement and Slavnaya 5 Site on Sakhalin Island in 2006 // Archaeological Discoveries. Institute of Archaeology. — M., Nauka Publishers, 2006. —p. 27.
8. V.A. Grischenko, A.V. Mozhaev. Excavations at the early Neolithic Site, Slavnaya 5 on Sakhalin Island in 2006. Problems of Archaeology, Ethnography, Anthropology of Siberia and Neighbouring Regions. Proceedings of the annual session of the Institute of Archaeology and Ethnography of the Siberian Branch of the Russian Academy of Sciences 2006. Novosibirsk: Publishers of the Institute of Archaeology and Ethnography of the Siberian Branch of the Russian Academy of Sciences, 2006. Vol. XII, Part I.—pp. 55–59.
9. V.A. Grischenko. Rescue Excavations of the Littoral Early Neolithic Economic Area at Pugachevo-1 Site (Sakhalin Island). North Eurasia in the Anthropogenic Period: Man, Paleotechnology, Geoecology, Ethnology, and Anthropology. All-Russian Conference with International Participation Dedicated to the 100th Anniversary of M.M. Gerasimov. Vol. 1. Irkutsk, 2007. — p.179–186.
10. V.A. Grischenko. Wood Processing Tools in the Early Neolithic Age of Sakhalin (Materials from the field season of 2005) // Nature, History and Cultural Heritage of the Sakhalin Oblast: Research and Discoveries. Proceedings of the Scientific Conference dedicated to the 110th anniversary of the Sakhalin Museum (1896–2006). Yuzhno-Sakhalinsk, 27–26 November 2006, Yuzhno-Sakhalinsk, 2008. — p. 127–134.
11. V.A. Grischenko. Archaeological Studies at Chaivo 6 Location 2 Site in the Nogliki District of the Sakhalin Oblast // Proceedings from Sakhalin State University. Issue 7. Yuzhno-Sakhalinsk, 2008. — pp. 26–37.
12. V.A. Grischenko. Results of the First Season of Excavations at the early Neolithic Site of Slavnaya 5 // Sakhalin and the Kurils: History and Modern Time. Proceedings of the Regional Research and Practice Conference (27–28 March 2007). Yuzhno-Sakhalinsk, 2008.—pp. 288–296.
13. V.A. Grischenko The early Neolithic Age on Sakhalin Island (on Historical Background) // Proceedings II (XVIII) of All-Russian Archaeological Conference in Suzdal. V.I.—M.: Institute of Archaeology of the Russian Academy of Sciences, 2008.—pp. 206–208.
14. V.A. Grischenko. The early Neolithic Age on Sakhalin Island. Abstract of the Thesis for Academic Degree of Candidate of History. —Novosibirsk, 2009.
15. V.A. Deryugin. Preliminary Results of the Studies at Yasnoye-8 site under Sakhalin-2 Project. // Archaeological Studies of the Transition Period from the Neolithic to the Iron Age in the Russian Far East. Ed. T. Kumaki and M. Fukuda.—Tokyo: Tokoro Laboratory of the Tokyo University, 2007,— pp. 39–47.
16. G.V. Matiushkov, I.A. Samarin, S.V. Tkachenko, V.O. Shubin. Monitoring in the Zone of Work under Sakhalin-2 Project on LNG Plant Construction Site in Prigorodnoye Village in August–November 2004 // Bulletin of Sakhalin Museum. Annual Publication of the Sakhalin Regional Museum of Local History. No. 14. Yuzhno-Sakhalinsk: Sakhalin Regional Museum of Local History, 2007.—pp. 104–131.
17. I.A. Samarin. Preserved Memory (Historical Monuments and Places of Interest in the Area of Sakhalin-2 Project Operations). Yuzhno-Sakhalinsk, 2008.—98 p.
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Instead of a Conclusion

So, an important phase of the Sakhalin-2 Oil and Gas project is at an end. The trans-Sakhalin pipeline has been built and commissioned. Tasks related to the conservation of cultural heritage on the island (historical and archaeological monuments and sites) have also been carried out successfully during this construction phase. Systematic research was carried out throughout this phase along the path of the pipeline and at other construction sites. Its aims were to find any cultural heritage objects in the area, which could be directly or indirectly affected by project operations, and to carry out conservation work such that they could be protected. Archaeological excavations were the most radical method for studying archaeological sites discovered along the route of the pipeline. During these recovery digs, material remains from ancient times were found in the cultural layer, studied and sent to museums for permanent safe-keeping. Samples of soil from the floor of ancient dwellings, charcoal from fires, fragments of earthenware and other remains of primeval life were sent to specialised scientific laboratories for a range of analyses and tests. The result of all the research work performed within the framework of the Sakhalin-2 Project, as well as other new construction expeditions on Sakhalin at the end of the 20th—beginning of the 21st century has served as a huge source of information. Evidence was discovered proving that the island was first populated in the early Paleolithic Age some 200,000 years ago. The earliest ceramic artefacts on the island were found to be up to 9,000 years old. Scientific knowledge about human settlements and the inter-relations between the ancient cultures of Sakhalin and the continent was increased. Thus, thanks to the cooperation of Sakhalin Energy and Sakhalin scientists, not only were dozens of archaeological sites saved from destruction, but the island's archaeology was significantly developed. The results of the studies have been shown at a series of exhibitions and are currently on display at the Educational Museum of Archaeology of Sakhalin State University, which was the main contractor for this work. The results have also been published in numerous journals.

Sakhalin archaeologists have formulated ideas for the conservation of cultural heritage identified during the Sakhalin-2 Project during the operations phase. The list of monuments and sites requiring conservation includes 54 sites situated in close proximity to the route of the pipeline; their conservation areas are demarcated with signs and the condition of sites will be monitored periodically.

A new stage of the Sakhalin-2 Project has begun, but the conservation of monuments remains vital because they are a part of our history and unique cultural heritage.