

ALASKA LEGISLATIVE COMMITTEES, 2009-2010 / 2009-2010  
11951 SENATE RESOURCES

**Comments by Steve Marshall  
President, BP Exploration (Alaska) Inc.  
To the Joint Alaska Senate and House Resources Committee  
August 18, 2006**

Chairman Wagoner, Co-Chair Samuels, Co-Chair Ramras, members of the Alaska Senate and House Resources Committees. Thank you for providing me an opportunity to discuss Prudhoe Bay oil field operations. While here, I will focus on four areas:

- o Why the decision was made to commence an orderly shutdown of the Prudhoe Bay oil field;
- o The aggressive steps we are taking to bring the entire field safely back to full production;
- o Our North Slope corrosion program; and,
- o The issue of how employees and contractors can raise concerns to us.

Mr. Chairman, I am convinced that the actions taken on August 6<sup>th</sup> to begin orderly shutdown of Prudhoe Bay were correct and avoided the risk of a major oil spill. After sharing my thoughts, I will do my best to answer your questions and if I don't have answers today, I will make every effort to get them for you.

Let me take a moment to introduce myself. My name is Steve Marshall, I am President of BP Exploration (Alaska) Inc. I have spent half of my 28 year career working in Alaska. I first moved here in 1978 near the time of production start up then spent eight years working on the Slope and here in Anchorage. I returned in 2001 to my current role. With me are Bill Hedges, our Manager of Corrosion Strategy and Planning and Patrick Vieth, a senior vice president of CC Technologies, a company with global operations that specializes in corrosion programs in the pipeline industry. Both gentlemen will provide the committees with information and be available to answer your questions.

There is no doubt that everyone in Alaska wants to see Prudhoe Bay safely back in full production. I can't say enough about the way the State of Alaska, DNR, DEC, DOR, the North Slope Borough, USEPA, the U.S. Department of Transportation, AOGCC and others have assisted and worked with us these past two weeks with insight and oversight. We stayed focused, we worked very hard and we demonstrated to ourselves and the regulators that it is safe to maintain production from the western operating area of the field. It has been a cooperative effort so far and we will achieve the goal of bringing the entire field back on line as soon as practicable.

The decision made on Sunday, August 6<sup>th</sup> to commence an orderly shutdown of the Prudhoe Bay oil field was based on corrosion reports from recent smart pig inspections of the eastern transit pipeline which were both unexpected and of concern to our corrosion experts. We were in the process of corroborating those results with field ultrasonic inspections when we found stained insulation that led us to shut in Flow Station 2 as a

precaution. After we shut in the flow station, we discovered the leak which then caused us to begin the orderly shut down of the field.

In a processed crude oil transit pipeline which had operated for almost 29 years without a spill, we discovered areas of severe internal corrosion. Given our decades of past operating experience, we did not expect to see the degree of corrosion we found in the eastern transit line. Our engineers and corrosion experts also were concerned that the corrosion program we employed had not indicated the problem sooner.

We are still seeking to understand exactly what caused the pitting of the line, but we won't know for sure until we can conduct laboratory tests. Not knowing exactly what we were up against, the only responsible option was to protect the environment from potential spills by shutting down the field in an orderly fashion.

Once the decision to shut down was made, hundreds of skilled men and women spent the next six days removing insulation and running thousands of test inspections of the western transit pipeline. There was not a single safety incident during their response and their findings allowed BP Exploration (Alaska) Inc., with input from state and federal governments and other external experts, to determine that we could maintain some production from Prudhoe Bay while moving forward with plans to bring the rest of the field back on line. The western operating area has now been restored to production of over 200,000 barrels per day. We are continuing our inspection programs and have added additional aerial and ground infra-red monitoring of this side of the field.

The eastern operating area is currently not producing with the exception of Point McIntyre which is producing 18,000 barrels of oil daily. We are continuing to inspect the condition of the eastern transit lines and are looking at ways we might be able to safely bypass trouble areas to get more oil to Pump Station #1. We currently have more than 340 engineers and inspection experts working on the business resumption project. When we have a full understanding of the engineering options available to us, we will add construction crews and be able to provide you with a better prediction of when full production may be achieved.

I won't speculate on when we will be able to safely resume full production from Prudhoe Bay, but I can report that we have some of the best people in the world working the problem from both a short and long term perspective. We have committed to replace 16 miles of transit lines. The pipe has been ordered from U.S. suppliers and will be shipped North in the fourth quarter of this year.

So how did we get to the point where corrosion could impact Prudhoe Bay production? Corrosion is more of a threat in some areas of our operations than in others due to the composition of the liquids in the lines. Corrosion can be caused by a number of conditions or circumstances, including the presence of carbon dioxide, water, solids and microbes as well as the geometry of the lines, whether there are low spots, and fluid velocity. It is only through laboratory testing that we will be able to confirm the corrosion mechanism. This transit line is downstream from facilities that separate crude

oil, natural gas, carbon dioxide and produced water, and the oil it carries is sales quality. With that situation, we did not expect the severe corrosion we found. In a few minutes, I will ask Bill Hedges, our BPXA corrosion expert to provide you with a short course on corrosion.

Every year, we conduct more than 100,000 inspections across the North Slope. We utilize a combination of ultrasonic testing, radiography, pigging and many other tools to maintain an ongoing assessment of corrosion. Every year we run more than 370 maintenance pigs up on the Slope. In addition, we conduct three to five in-line inspections with smart pigs per year. Every year we make repairs to 250-300 sections of pipe. Most of those cases involve small facility piping. In addition to small facility piping, last year BP Exploration (Alaska) Inc. replaced about 5,000 feet of production pipeline that no longer met our operating standards. On any given day, up to 225 corrosion experts are on the Slope examining and addressing corrosion issues.

We can't eliminate the risk of corrosion, but we do manage it in a most professional manner. Given our performance history and our existing programs, we believed we had an effective corrosion management program and as strong as any program in a similar setting anywhere on the globe. Clearly, recent events have shown that there was a gap in that program and we are examining and analyzing it closely. We will utilize smart pigging in the future on the new transit lines. We will reanalyze our entire corrosion management program for North Slope facilities. It is happening already and if more changes are needed, we will make them.

On a related subject, you may have heard lately that BP Exploration (Alaska) Inc. employees, contractors and others have raised concerns about our corrosion and maintenance programs on the North Slope. Where issues are raised doesn't matter, we just want to know what the concern is so that we can review it, do our best to understand it and act on it.

We actively encourage our workforce to raise issues of concern and promote open communication in many forums. Among communications options available to our employees and contractors are:

- o A health, safety and environmental hotline for reporting concerns;
- o Employee-run safety committees to discuss and resolve safety issues;
- o A worldwide intranet program we call "Open Talk" that is in place to anonymously collect comments and concerns for investigation
- o An external contact that any employee can call anonymously to report any concern; and,
- o The opportunity for employees, contractors and others to contact people or groups totally unconnected with BP to report a concern.

Over the past five years, we have received more than 600 concerns and suggestions from employees and contractors. They cover everything from the intensity of headlights and the age of mattresses to workplace safety and proper disposal procedures. We look into every specific suggestion or concern and take action as appropriate.

BP Exploration (Alaska) Inc. has an excellent workforce on the North Slope. Many of our employees and contractors have been working at Prudhoe Bay since the first oil reached Pump Station #1 more than 11.3 billion barrels ago. To see how these people applied themselves over the past two weeks is testament to their skills, commitment and work ethic.

In closing Mr. Chairman, since March, we identified a gap in our corrosion inspection system and we will correct it. In the future, we will have a better system to protect our pipelines and we have already gained important new operating knowledge. Through adversity, we will enhance our operating capability. That benefits us, the State of Alaska, your constituents and the nation as a whole. I deeply regret the problems caused by the situation we discovered. But we will emerge stronger and more knowledgeable as a result of this challenge.

Thank you very much.

I'd now like to ask Bill Hedges, our Manager of Corrosion, Strategy and Planning to give you a short primer on why corrosion occurs and what we do to manage it. Bill.



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**CC Technologies**  
**A DNV COMPANY**  
*Innovative Solutions*

August 18, 2006

**Written Submission to the Alaska Senate/House Resources Committees**

**CC Technologies**  
**Presented by Patrick H. Vieth**

Let me talk briefly about CC Technologies and our parent company DNV. DNV is an independent foundation established in Norway in 1864. Over the past century, it has expanded to over 6,500 employees whose objective is to safeguard life, property and the environment and is a leading international provider of services for managing risk.

CC Technologies, established over 20 years ago, was acquired by DNV in February, 2005. CC Technologies staff have worked in the area of corrosion, materials, and integrity around the world including the US, Canada, South America, the Middle East, Europe, and Asia. About 80% of our work is in North America and about 75% of it in the oil & gas industry. CC Technologies' laboratory facilities in Dublin Ohio constitute one of the largest centers of corrosion science and technology in the world. CC Technologies' unique advantage is its ability to bridge applied research with practical and innovative engineering solutions.

I am a Senior Vice-President for CC Technologies with a mechanical engineering degree from Ohio State University. I have 18 years of experience in the field of pressure vessel fracture behavior and defect assessment methods for pipeline systems. My expertise is primarily directed toward the development and implementation of short-term and long-term pipeline integrity management programs. Specifically, I work to develop programs to reduce the likelihood of failures through in-line inspection, hydrostatic testing, defect assessment, risk assessment and fit for purpose assessment. I also have numerous publications on corrosion assessment, pipeline failures, in-line inspections, and full-scale testing.

For this project, I am serving as the team integrity lead for CC Technologies. In this role, I will rely upon my experience from having worked with most major pipeline operators and the experience and expertise of the CC Technologies staff that are considered subject matter experts in areas such as internal corrosion, external corrosion, fracture, failure analysis, and oil field pipeline operations. For

BP, CC Technologies will provide technical resources, serve as independent and impartial advisors, and provide diverse experience and competencies in pipeline corrosion, integrity, and risk issues.

Senior member of the CC Technologies staff that may be relied upon for this project include:

- Dr. Oliver Moghissi. NACE Board of Directors. North Slope Production Experience. Developed ICDA for Crude Oil systems.
- Dr. Bill Harper, P.E., Over 10 years of experience in performing statistical analyses on issues related to pipelines.
- Dr. Tom Bubenik. PRCI Distinguished Researcher. Leading industry in-line inspection expert.
- Kevin C. Garrity, P.E. NACE CP Specialist. Recognized expert on external corrosion.
- Steven Shaw. DNV. Risk management decision processes.
- Dr. John Beavers. NACE Fellow. Failure analyses of pipe defects and failures. Contributing author for Peabody's Control of Pipeline Corrosion (2<sup>nd</sup> Edition).
- Dr. Gerry Koch. Project manager for FWHA Cost of Corrosion Study.
- Dr. Neil G. Thompson. NACE Past President. Founder of CC Technologies.



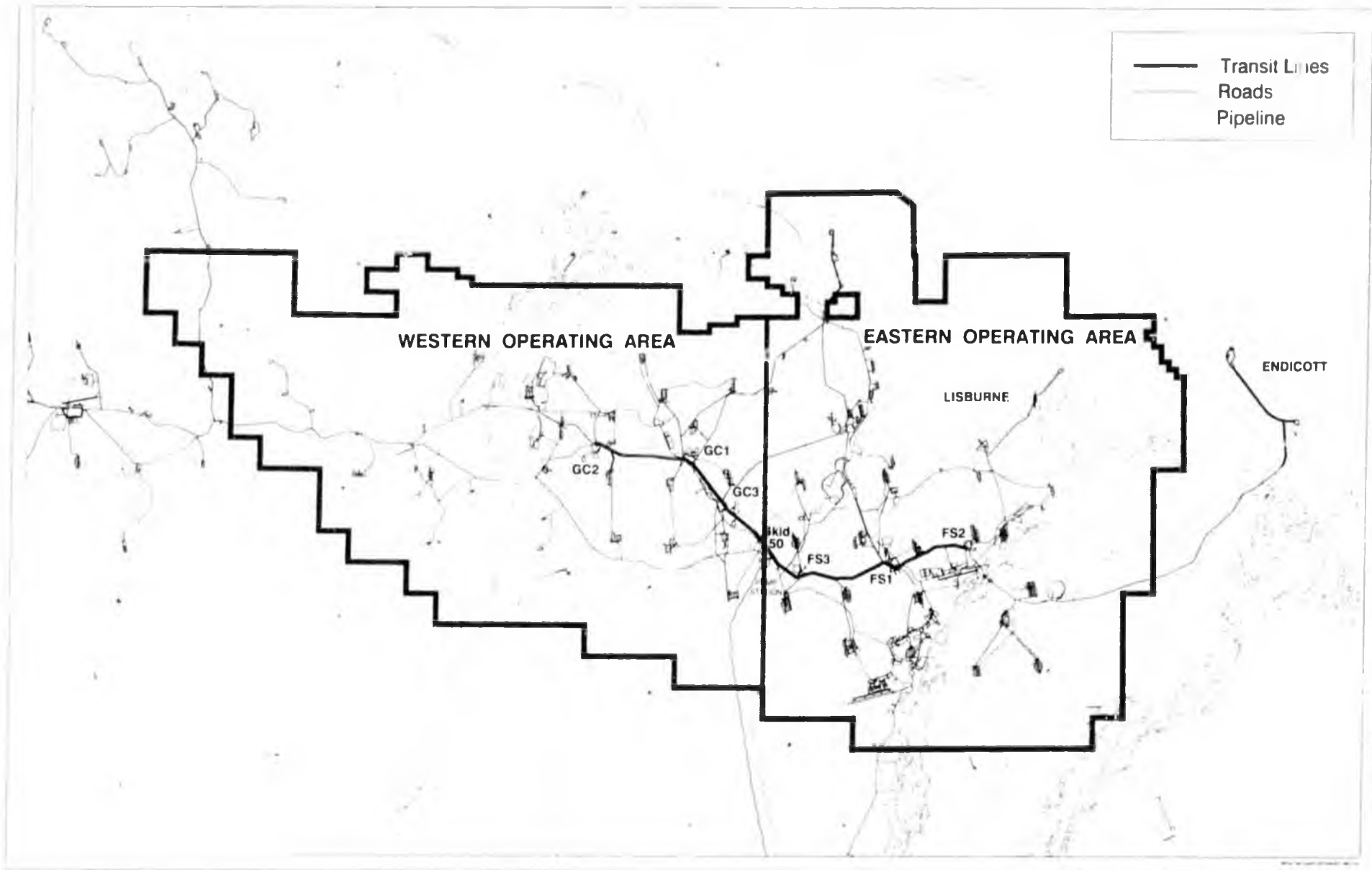
bp

PRUDHOE BAY UNIT

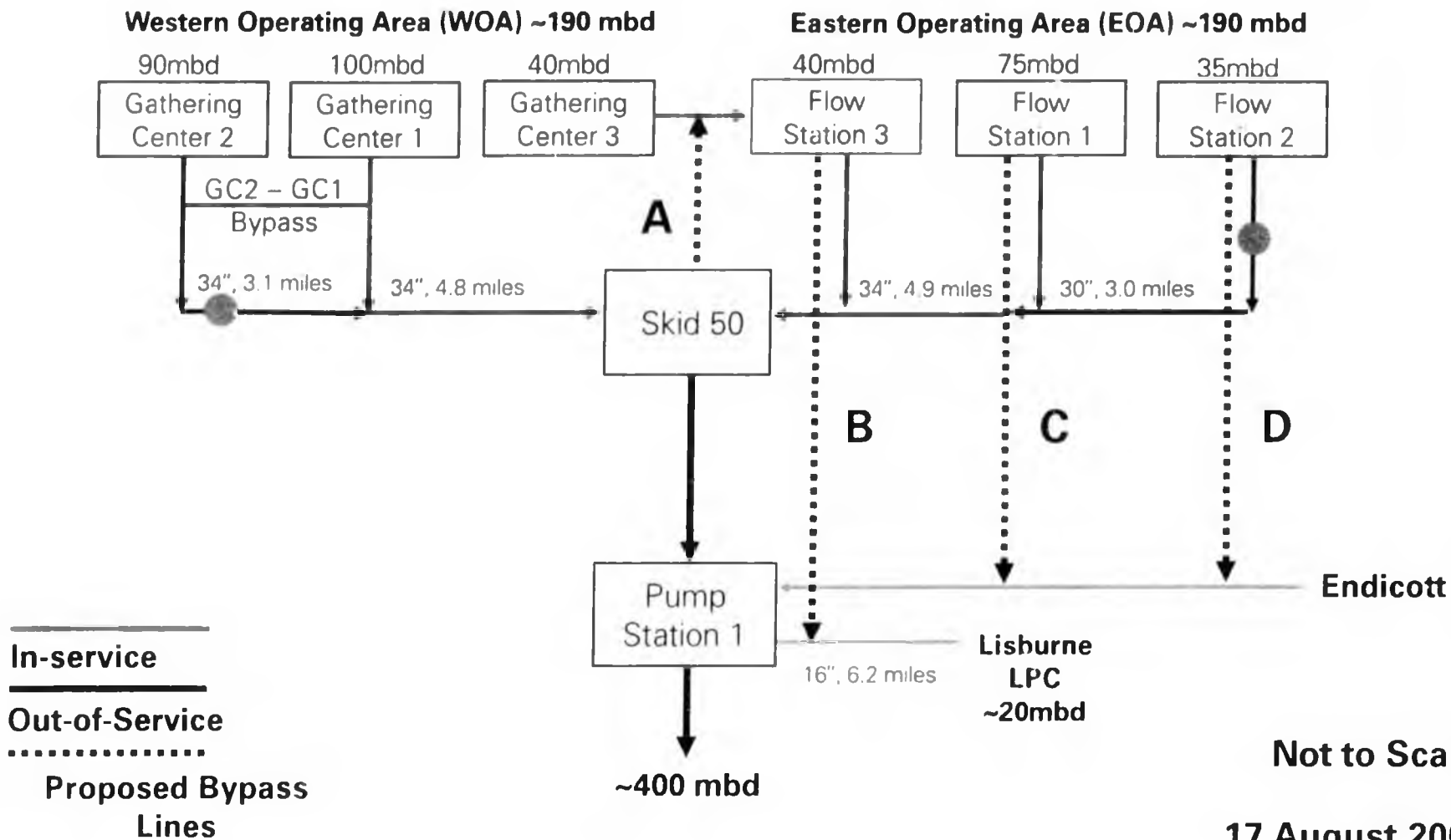
0 2 4 6 Miles

Legend:

- Transit Lines
- Roads
- Pipeline



# Prudhoe Bay Pipeline Schematic

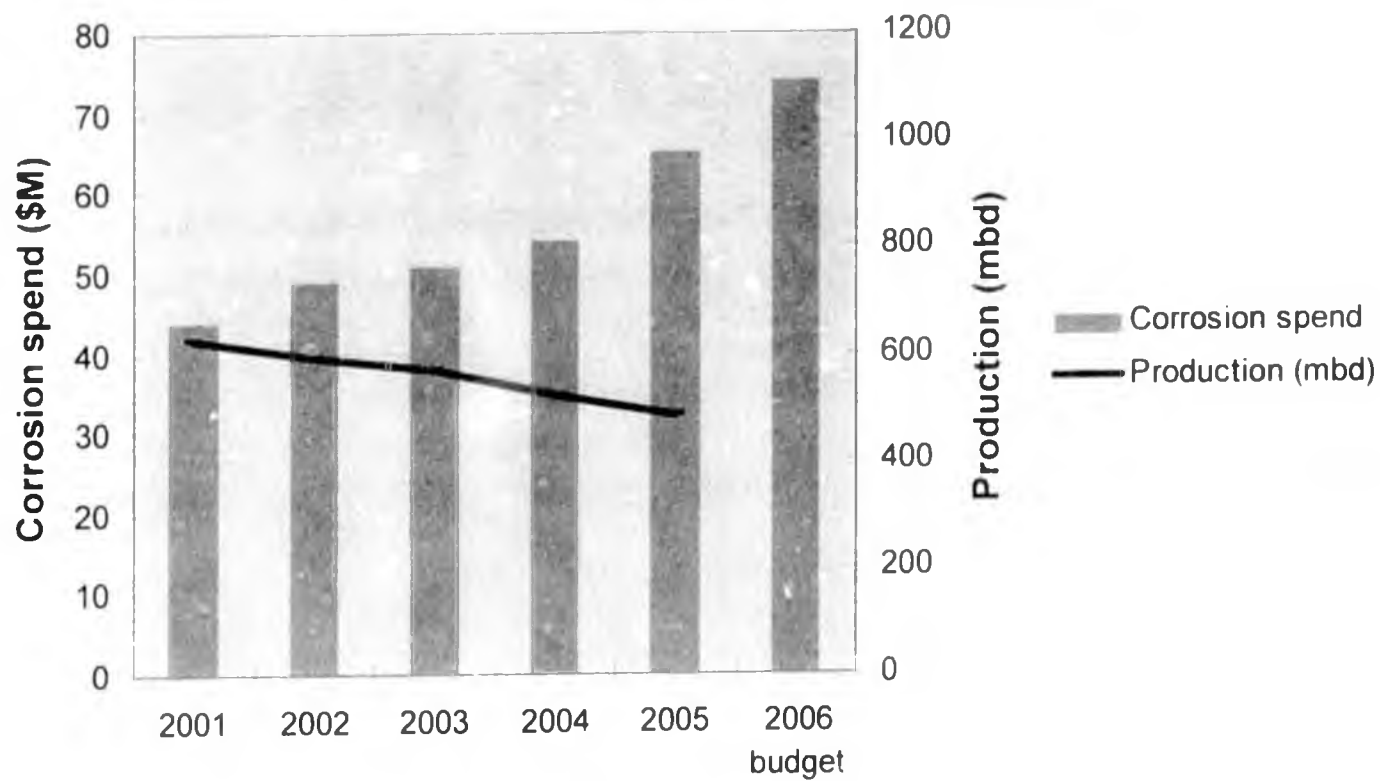


## Prudhoe Bay Maintenance & Corrosion Spend

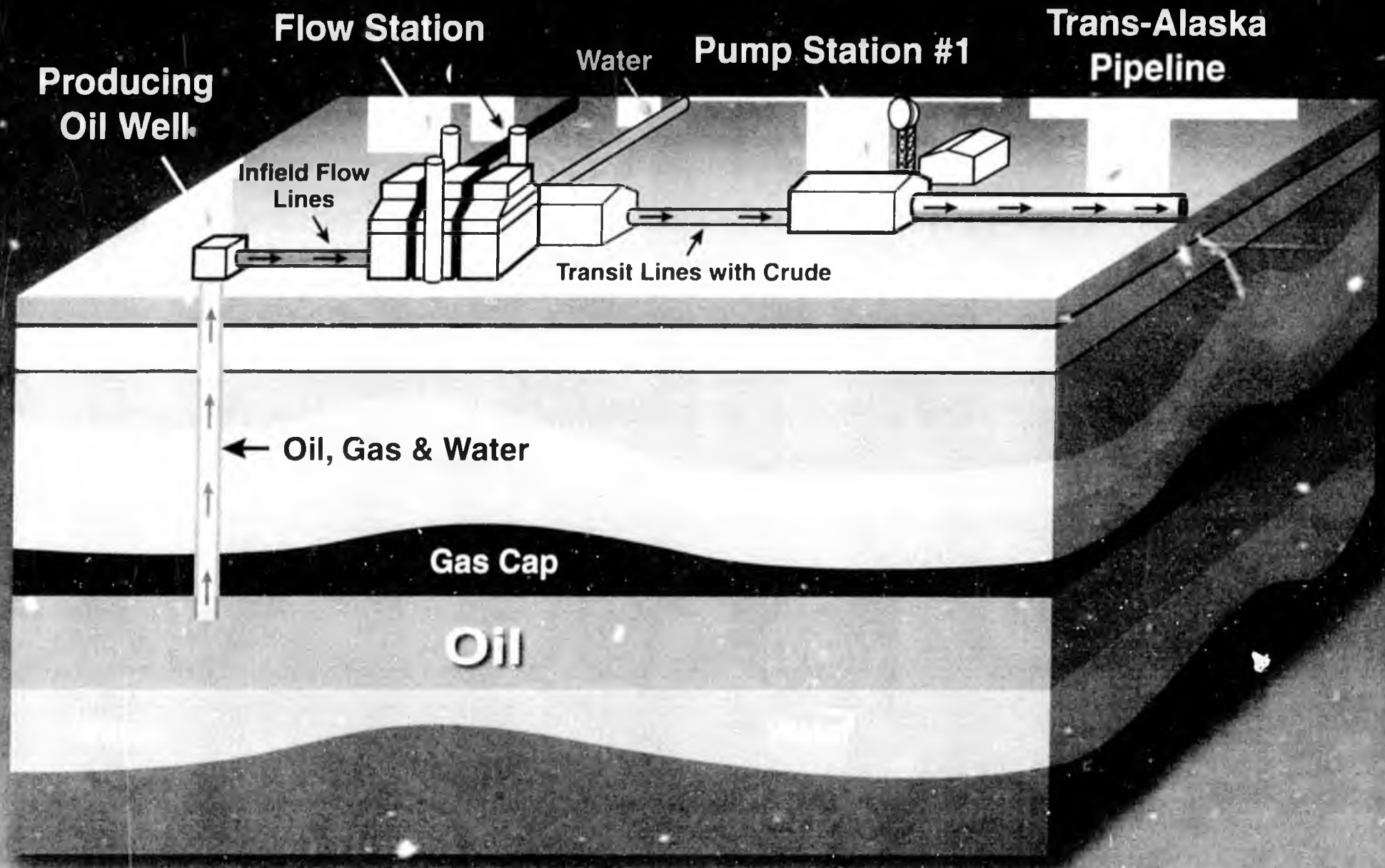


<b>\$M Gross</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006 plan</b>
Maintenance	175	177	180	185	250	300
Corrosion Mgmt	44	49	51	54	65	74

# Prudhoe Bay Corrosion Management Spend



# Prudhoe Bay





## **Ways to communicate employee / contractor concerns to BP.**

- **Line Management**
- **Employee Run Safety Committees**
- **HSE 1-800 Hotline**
- **Anonymous call to External Contact**
- **Open Talk**

# STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

## DEPARTMENT OF NATURAL RESOURCES

### OFFICE OF THE COMMISSIONER

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August 15, 2006

#### DISTRIBUTION LIST

RE: State Pipeline Coordinator's Office (SCPO) 2006 Lease Compliance Monitoring Report

To Whom It May Concern:

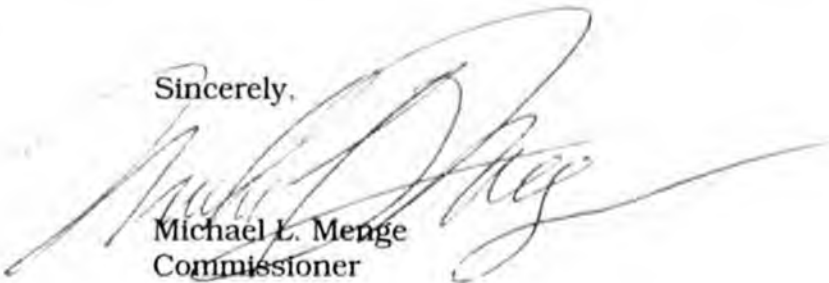
The 2006 Lease Compliance Monitoring Report summarizes SPCO's oversight of constructed pipeline rights-of-way issued by the State. It addresses 15 pipeline right-of-way leases issued under Alaska Statute 38.35, the Right-of-Way Leasing Act and one grant of right-of-way issued under Alaska Statute 38.05, the Alaska Land Act. The report provides the results of SPCO oversight activities and information about construction, operations, and maintenance activities for common carrier pipelines in Southcentral Alaska and on the North Slope.

The SPCO has a record of efficiency in responding to industry permitting needs and assuring pipeline integrity through oversight. The office is known for working with applicants early and using streamlined permitting processes.

As you know, I recently signed the conditional right-of-way lease for the Alaska Natural Gas Development Authority's (ANGDA) proposed gas spur line between Glennallen and Palmer. Another successful effort accomplished by the SPCO in support of gas pipeline development projects in Alaska.

During this administration the SPCO has made some modifications to improve implementation of the oversight program. This is the first time the SPCO has prepared a formal lease compliance report showcasing their oversight program and we are pleased to provide this copy to you.

Sincerely,



Michael L. Menge  
Commissioner

Enclosure: State Pipeline Coordinator's Office Lease Compliance Monitoring Report, 2006

cc: Mike Thompson, Acting State Pipeline Coordinator

*"Develop, Conserve, and Enhance Natural Resources for Present and Future Alaskans."*



**STATE PIPELINE**

**COORDINATOR'S  
OFFICE**

*Lease Compliance  
Monitoring Report  
2006*

**ALASKA DEPARTMENT OF  
NATURAL RESOURCES**

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## **Executive Summary**

The 2006 State Pipeline Coordinator's Office Lease Compliance Monitoring Report describes the status of pipeline right-of-way leases issued by the State under Alaska Statute 38.35, the Alaska Right-of-Way Leasing Act, and one grant of right-of-way for a utility pipeline issued under Alaska Statute 38.05, the Alaska Lands Act. It is produced by the State Pipeline Coordinator's Office (SPCO), an agency within the Alaska Department of Natural Resources (ADNR) and the Joint Pipeline Office (JPO).

The State fiscal year (FY) begins on July 1 and ends on June 30. FY06 began July 1, 2005 and ended June 30, 2006. This FY06 report includes information about the prior year's construction, operations, and maintenance activities for common carrier pipelines in Southcentral and on the North Slope. Summaries of ADNR's lease administration and compliance oversight activities related to those pipelines and rights-of-way are also included.

This report is intended for use by the public, government agencies, pipeline right-of-way lessees, and others interested in these pipelines.

Note that information about the Trans-Alaska Pipeline System (TAPS) is not contained in this report, but is the focus of the Joint Pipeline Office annual report available at <http://www.jpo.doi.gov>.

## **Acronyms and Abbreviations**

All of the acronyms and abbreviations used in this report are defined in Appendix A.

## **Contact Information**

Alaska Department of Natural Resources  
State Pipeline Coordinator's Office  
411 West 4<sup>th</sup> Avenue  
Anchorage, Alaska 99501  
(907) 257-1300

*Unless otherwise indicated, all photographs in this report were taken by the SPCO Lease Compliance Oversight Team. All maps are adapted from maps available publicly through ADNR's Alaska Mapper.*

## **Cover Photo**

This aerial photo of an un-named stream crossing was taken during the course of a compliance oversight field surveillance of the Badami Pipelines in September 2005. The BP-operated Badami Sales Oil Pipeline connects the North Slope's easternmost development, Badami, to the Endicott Pipeline.

## I. Joint Pipeline Office (JPO)

### JPO Mission Statement

*The Joint Pipeline Office, a consortium of State and federal agencies, regulates the Trans-Alaska Pipeline System and other Alaskan oil and gas pipelines in the best interests of the people of the nation and the State of Alaska. Safety, environmental protection, pipeline integrity, and regulatory compliance will be achieved through partnering with industry.*



The Joint Pipeline Office is a consortium of State and federal agencies sharing similar regulatory or management responsibilities related to oil and gas industry pipelines in Alaska, most notably the Trans-Alaska Pipeline System. The JPO was established in 1990 to work cooperatively on large scale natural gas pipeline right-of-way (ROW) leasing and TAPS oversight.



*The Alpine Pipelines (oil, diesel, and utility) connect the Alpine Development on the Western North Slope to infrastructure in the Kuparuk River Unit.*

Representatives from six of the 12 agencies are co-located to coordinate pipeline compliance oversight and issue right-of-way leases and other permits needed for oil and gas industry projects. Agencies have developed cooperative agreements to share staff,

knowledge, equipment, and office space. This unique working environment eliminates duplication, is more customer-oriented, and simplifies government processes.

The US Bureau of Land Management and Alaska Department of Natural Resources are designated leads and jointly manage the JPO. Agencies retain their individual authorities while working together on common projects and issues. Agency personnel can participate in self-directed work teams and may perform oversight functions in addition to their jurisdictional responsibilities. All agencies coordinate activities, such as permitting projects, as needed. The following agencies currently participate in the JPO:

<u><b>JPO-Participating State Agencies</b></u>	<u><b>JPO-Participating Federal Agencies</b></u>
<u>Dept. of Natural Resources</u>	<u>Bureau of Land Management</u>
<u>Dept. of Environmental Conservation</u>	<u>US Army Corps of Engineers*</u>
<u>Dept. of Public Safety, Division of Fire Protection</u>	<u>US Department of Transportation Office of Pipeline Safety*</u>
<u>Dept. of Labor &amp; Workforce Development</u>	<u>Environmental Protection Agency</u>
<u>Dept. of Fish &amp; Game*</u>	<u>US Coast Guard*</u>
<u>Dept. of Transportation &amp; Public Facilities*</u>	<u>Minerals Management Service*</u>

\*No full-time representatives co-located at the JPO

The Federal and State agencies within the JPO, except for ADNR/SPCO, currently direct their efforts on one active pipeline, TAPS. ADNR staff within the SPCO have the additional responsibility of lease administration and compliance monitoring for sixteen other active pipelines as well as pipelines in the pre-application and application stages of development.

## II. State Pipeline Coordinator's Office (SPCO)

Known for working with applicants early and using streamlined permitting processes, the SPCO, an office within ADNR and the lead State agency in the JPO, is responsible for administration and oversight of State pipeline ROW leases issued under Alaska Statute 38.35, the *Alaska Right-of-Way Leasing Act*. Under AS 38.35, companies proposing to operate pipelines in whole or in part on State land must apply for and be granted a ROW lease prior to construction. Key concepts in the Act include:

- The Act applies to common carrier and contract pipelines, but field gathering lines are exempted
- Lessees pay fair market value to lease State lands in the pipeline ROW
- Safeguards are included to protect the environment, public safety, and health

- o Lessees reimburse the State for costs in processing and administering leases
- o The State retains a continuing right of access and inspection to ensure compliance with the lease and applicable laws

**Field Gathering Lines Exempt:** Per AS 38.35.020(b), "The commissioner may by regulation exempt the construction or operation of field gathering lines or any reasonable classification of them from the requirement of a right-of-way lease under this chapter." Many oil and gas pipelines in Alaska are classified as field gathering lines, exempting them from AS 38.35 and SPCO oversight. 11AAC 80.055 defines field gathering lines as: "pipe and associated facilities, including separators, test equipment, pumps, treaters and tanks, used in the transfer of gas or oil from a well or other facility used in the production of gas or oil to a point where there is either a custody transfer of the gas or oil or where the gas or oil enters a common carrier pipeline, whichever first occurs." Per 11AAC 80.055, the Prudhoe Bay "Transit Lines" are classified as field gathering lines and were not authorized under 38.35. Field gathering lines are regulated in Alaska by ADEC and permitted through ADNR's Division of Oil and Gas.

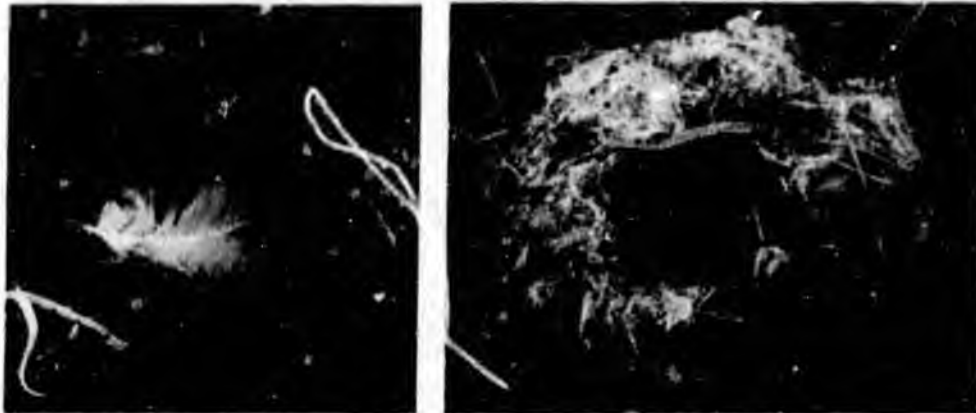


*The Badami Sales Oil Pipeline transports processed crude oil from the Badami Development on the east to the Endicott Pipeline. The Badami Utility Pipeline, resting on the same supports, has been used to transport fuel gas from Endicott to Badami.*

The SPCO currently administers 16 existing leases, one grant, and several proposed pipeline ROW leases within Alaska. Lease administration and compliance oversight of TAPS is accomplished cooperatively by the State and federal governments through the JPO. The remaining 16 active pipelines are administered only through the SPCO and are the subject of this report. Each State ROW lease is assigned a unique number according to the former Alaska Division of Lands (ADL) numbering system. The ADNR's Land Administration System, accessible from the web at [www.dnr.state.ak.us/las](http://www.dnr.state.ak.us/las), is a resource where agencies, industry, and the public can obtain detailed information about ADNR case files including legal descriptions, status plats, and maps of State land in the ROW.

SPCO-administered pipeline ROW leases are listed in the table below.

<b><u>Effective Right-of-Way Leases</u></b>	<b><u>ADL No.</u></b>	<b><u>Status</u></b>
Alpine Oil Pipeline	415701	Operating
Alpine Diesel Pipeline	415932	Operating
Alpine Utility Pipeline (Grant)	415857	Operating
Badami Sales Oil Pipeline	415472	Operating
Badami Utility Pipeline	415965	Operating
Endicott Pipeline	410562	Operating
Kenai Kachemak Pipeline	228162	Operating
Kuparuk Pipeline	402294	Operating
Kuparuk Pipeline Extension	409027	Operating
Milne Point Pipeline	410221	Operating
Milne Point Products Pipeline	416172	Warm shutdown
Nikiski Alaska Pipeline	69354	Operating
Northstar Oil Pipeline	415700	Operating
Northstar Gas Pipeline	415975	Operating
Nuiqsut Natural Gas Pipeline	416202	Constructed; not operating
Oliktok Pipeline	411731	Operating
Trans-Alaska Pipeline System	63574	Operating
<b><u>Right-of-Way Applications</u></b>	<b><u>ADL No.</u></b>	<b><u>Status</u></b>
Alaska Natural Gas Transportation System	403427	Application
Dayville Road Pipeline A	229284	Application
Dayville Road Pipeline B	229285	Application
Dayville Road Pipeline C	229286	Application
Eastern North Slope Oil Pipeline	417577	Application
Eastern North Slope Gas Pipeline	417578	Application
Glennallen-Palmer Spur Line	229297	Conditional lease; no pipeline constructed
Liberty Oil Pipeline	416002	Inactive application
Liberty Utility Pipeline	416003	Inactive application
Phillips Tyonek Deep Pipeline	227422	Inactive application
Point Thomson Gas Cycling Pipeline	416904	Application
Trans-Alaska Gas System	413342	Conditional lease; no pipeline constructed



State pipeline right-of-way lands serve as valuable habitat for wildlife. These photos depict a migratory bird feather (left) and a small bird nest (right) found by an SPCO surveillant within the Badami pipelines ROW during June 2006 surveillance.

The intent of the ROW Leasing Act is "...the development, use and control of a pipeline transportation system be directed to make the maximum contribution to the development of the human resources of this State, the increase in the standard of living for all of its residents, the advancement of existing and potential sectors of its economy, the strengthening of free competition in its private enterprise system, and the careful protection of its incomparable natural environment."

To fulfill this intent, the SPCO is charged with administering pipeline ROW leases. These duties include processing ROW applications, drafting leases for the ADNR Commissioner's approval, implementing the public review process, issuing project-specific authorizations, and monitoring compliance with lease conditions. These functions are the responsibility of the SPCO ROW Section. Administratively, two teams comprise the ROW Section, the Lease Administration Team, and the Lease Compliance Oversight Team. A description of the two teams follows.

#### **Lease Administration**

The SPCO lease administration team is currently staffed by five State ADNR employees. The team processes ROW lease applications and amendments, implements public processes, issues project-specific authorizations, administers rental and other payments, and performs other functions as necessary.

#### **Compliance Oversight**

The SPCO compliance oversight team is currently staffed by two State ADNR employees who share responsibilities for compliance oversight monitoring of the 15 active non-TAPS State pipeline ROW leases issued under AS 38.35 and one utility pipeline grant issued under AS 38.05. The team's primary function is to document compliance with lease conditions and monitor select issues as determined by the ROW

Section Chief and State Pipeline Coordinator. The compliance oversight program operates on a cyclical basis and consists of three main elements, further described in the following sections:

- 1) *Compliance Monitoring*: consists of field inspections called surveillances and records reviews conducted on a cyclical basis.
- 2) *Annual Lessees' Reports*: required by each ROW lease, the lessees submit reports annually which are reviewed by the compliance oversight team.
- 3) *Annual SPCO Lease Compliance Monitoring Report*: produced by the compliance oversight team, the annual report provides an opportunity for the team to review both SPCO and lessee activities for the year and can be used to focus attention on specific topics as necessary.

### **1) Compliance Monitoring**

The purpose of SPCO compliance monitoring is to evaluate lessee compliance with active lease requirements at a frequency prescribed by the State Pipeline Coordinator. Generally, rights-of-way for constructed pipelines are inspected on a bi-annual basis. In the first year, the compliance oversight team looks at general lease compliance. In the second year, the team does more in-depth surveillance on a specific topic, such as corrosion. The work plan is scheduled so that approximately half of the leases get a general overview each year, while the other half get a more focused subject-specific surveillance. Each AS 38.35 pipeline receives some compliance monitoring each year.

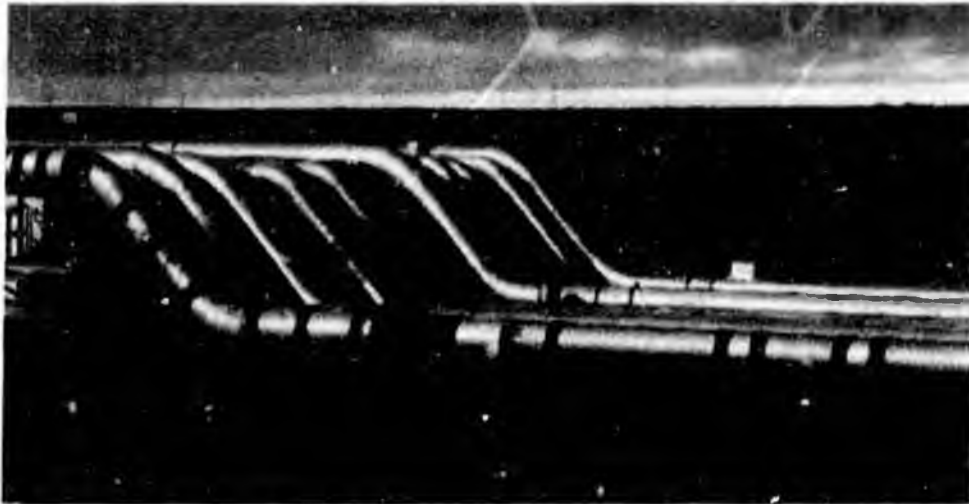
To develop the work plan, the team evaluated each lease requirement and determined its functional status relative to annual surveillance efforts. For example, many lease provisions are definitions or clarifications of legal/administrative points that require no surveillance. Other provisions apply only to a certain activity phase such as construction or termination. Finally, some are invoked only after action initiated by the lessee or State Pipeline Coordinator. Those provisions are described as "conditional".

In 2003 and 2004, the SPCO conducted an internal review of the compliance monitoring program. The compliance oversight team conducted a complete surveillance regarding each checklist for each pipeline ROW, documenting compliance with every lease provision, including those that were administrative or legal in nature and those denoted as conditional, regardless of the activation status. This allowed the SPCO and lessees to fully review each lease condition and fostered a thorough discussion of the compliance oversight program. Now, the SPCO only examines those lease provisions where the need for surveillance is continuous, or conditional (if activated).

A matrix of all the requirements for each lease and the respective SPCO surveillance determination and frequency was developed. Matrices for each of the SPCO jurisdictional pipelines are documented in the case files. Each matrix summarizes three decision criteria:

1. *What activity phase (construction, operation, maintenance, termination or any combination of the four) does each requirement apply to;*
2. *Is surveillance required (if not, why) and;*

3. *If surveillance is required, what is the necessary frequency?*



*Though many pipelines criss-cross Alaska's North Slope, most are not common carrier pipelines and do not lease a State ROW under AS 38.35. Instead, they are permitted through ADNR's Division of Oil and Gas under AS 38.05. Here the Endicott Pipeline and other pipelines are depicted crossing the Sagavanirktok River on a bridge near Deadhorse. The Endicott Pipeline is the one farthest back with the small white sign.*

For the sixteen jurisdictional pipelines addressed in this SPCO report, the lease compliance oversight team is working with lessees, through their quality assurance programs, to ensure lease requirements are met. Lessees are responsible for conducting pipeline operations in accordance with applicable laws and the terms and stipulations of each ROW lease. Lessees document compliance through quality assurance (QA) and surveillance & monitoring programs, which are approved by the State Pipeline Coordinator. Though individual lease requirements vary, all SPCO-administered ROW leases require the lessee to develop a QA program or plan that provides evidence of compliance with lease stipulations and applicable laws. For example, the Alpine Oil Pipeline lease defines a QA Program as "all those documented, planned, and systematic actions necessary to provide evidence that the Lessee is satisfying lease commitments and requirements for integrity of the Pipeline System, health, safety, and the environment."

An important element of maintaining compliance with lease conditions and stipulations is routine inspection of the pipeline and ROW. Lessee surveillance & monitoring programs are developed to ensure measures are in place to prevent, detect, and abate conditions which could threaten pipeline integrity, the environment, or public health and safety. Revisions to QA and surveillance & monitoring programs are reviewed by SPCO staff and must be approved by the State Pipeline Coordinator prior to implementation.

In addition to oversight of lessees' QA and surveillance & monitoring activities, the compliance oversight team conducts field surveillance of pipelines and rights-of-way.

meets with lessees to learn more about their programs, and reviews records provided by lessees. The products of a compliance oversight field visit or records review are 1) Surveillance reports and 2) Surveillance field notes.

1) Surveillance Reports – After completion of a field visit, known as a surveillance, the surveillant writes up a "checklist" with a unique number which lists the lease or grant section, covenant, or stipulation that was reviewed. To complete the checklist, the surveillant provides observations to support a determination of *satisfactory* or *unsatisfactory* for the lessee's performance under that lease provision. Unsatisfactory conditions can be *minor* or *significant*. There is also an option for a surveillant to describe an unsatisfactory condition as *corrected on the spot*. Often supporting documents are attached to surveillance reports. Usually when a surveillant makes an unsatisfactory determination, the lessee is given a deadline to correct the condition or to complete required follow-up. Once signed by the surveillant and supervisor, the surveillance checklist becomes a surveillance report with a unique number. Copies are sent to the lessee's Registered Agent, entered in the JPO Document Tracking System, and the original is filed in the lease case file.

2) Surveillance Field Notes - One set of surveillance field notes for each trip may be written by the surveillant(s) and attached to a surveillance report. Each set of field notes is also filed with that lease's Quality Program. Field notes are usually detailed and contain digital photographs of field conditions to support information contained in surveillance reports. For any given field visit, there will be one set of field notes but may be one to dozens of surveillance reports which correspond to the field notes. Field notes can also apply to more than one pipeline inspected on a single field trip, while surveillance reports apply to only one ROW case file.

Because each ROW lease contains different sections and stipulations, surveillance checklists are not always directly comparable across leases. The number of surveillance reports produced is not always indicative of the scope of compliance monitoring for that pipeline. Sometimes field surveillance is focused on a specific topic, generating only a handful of detailed reports. Other surveillance trips are more general in nature and may generate dozens of surveillance reports with less detail. The SPCO annual report and surveillance field notes provide qualitative compliance monitoring information to complement quantitative data from surveillance reports. For details about this year's compliance oversight program, see Section IV of this introduction.

## 2) Annual Lessees' Reports

Annual comprehensive reports submitted by pipeline ROW lessees are a critical element of the compliance oversight program. The annual report is supposed to document the lessee's compliance with lease requirements. The reports are intended to provide detailed information about the lessee's pipeline activities for the previous year. In some annual reports, lessees have produced their own detailed ROW Agreement compliance matrix to show how they are achieving compliance. Information provided in the annual report can help the compliance oversight team identify future surveillance priorities.

Each ROW lease has a provision requiring a comprehensive report on pipeline activities. In addition to lease-specific requirements for annual reporting, the State Pipeline Coordinator has required that each lessee provide an annual comprehensive report on pipeline activities that includes, at a minimum:

1. *The results of the lessee's surveillance & monitoring program during the preceding year, including annual and cumulative changes in facilities and operations, the effects of the changes, and proposed actions to be taken as a result of the noted changes:*

- *Provide a summary of the scope of all surveillances, audits, self-assessments or other internal evaluations performed by the lessee.*
- *Summarize findings, action items and other observations identified as a result of all surveillances, audits, self-assessments or other internal evaluations performed by the lessee.*
- *Describe corrective and preventative actions planned or implemented as a result of surveillances, audits, self-assessments or other internal evaluations performed by the lessee.*
- *To the extent known, list by quarter, those surveillances, audits, self-assessments or other internal evaluations planned for next year.*

2. *The state of, changes to, and results from the last year of the lessee's risk management program, Quality Assurance Program, and internal and external safety programs.*

3. *Lessee's performance under the right-of-way lease, including stipulations.*

4. *Information on construction, operations, maintenance, and termination activities necessary to provide a complete and accurate representation of the lessee's activities and the state of the pipeline system.*

5. *A summary of all events, incidents and issues which had the potential to or actually did adversely impact pipeline system integrity, the environment, or worker or public safety and a summary of the lessee's response.*

6. *A summary of all oil and hazardous substance discharges including date, substance, quantity, location, cause, and cleanup actions undertaken. Minor discharges below agreed upon thresholds may be grouped into monthly total amounts, provided the number of separate incidents is reported.*

7. *Any additional information requested by the State Pipeline Coordinator.*

Lessees are required to submit their annual report for the previous year by January 31<sup>st</sup>. The compliance oversight team reviews each lessee's report in detail and provides feedback. If a lessee's report does not meet the minimum requirements, the team will require additional information from the lessee as necessary. For information about the 2005 lessee reports, see Section IV, This Year's Compliance Oversight Activities.

### **3) Annual SPCO Lease Compliance Monitoring Report**

The purpose of the Annual SPCO Lease Compliance Monitoring Report, produced by the compliance oversight team, is to summarize annual lessee and SPCO activities

related to each pipeline ROW lease for the preceding Fiscal Year (July 1 through June 30). The reports generally provide some background information, a summary and analysis of the lessee's annual report, a summary of the current year's oversight program, and a look forward to upcoming issues related to each ROW lease. For information about this year's report, see Section IV, This Year's Compliance Oversight Activities.

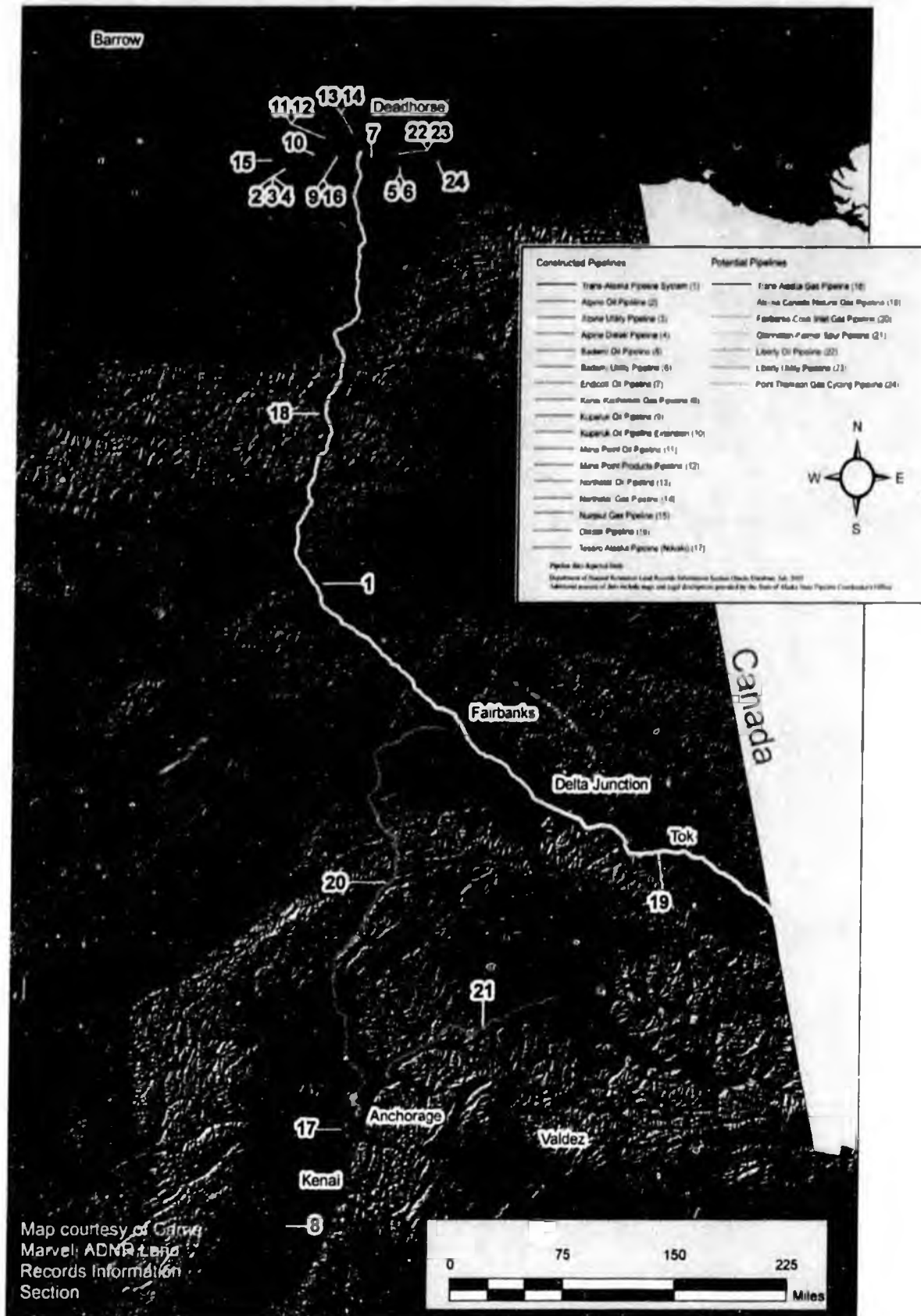
### **III. Pipelines Subject to Compliance Monitoring**

Currently, there are fifteen non-TAPS AS 38.35 pipeline ROW leases and one AS 38.05 ROW grant subject to compliance monitoring through the SPCO. (This number does not include the Trans-Alaska Pipeline System, which is monitored through the JPO and reported on in the JPO Annual Report.) Fourteen of these pipelines are operational, the Milne Point Products Pipeline is in warm shutdown status, and the Nuiqsut Natural Gas Pipeline is constructed but not yet operational.

The following table summarizes information about the sixteen jurisdictional pipelines that are the subject of this report.

<u>Location</u>	<u>ADL</u>	<u>Name (product)</u>	<u>Length in Miles*</u>	<u>ROW Lessee</u>
North Slope	415701	Alpine Oil	34	ConocoPhillips Company
North Slope	415932	Alpine Diesel	34	ConocoPhillips Company
North Slope	415857	Alpine Utility (Grant)	34	ConocoPhillips Company
North Slope	415472	Badami Sales Oil	25	BP Transportation (Alaska)
North Slope	415965	Badami Utility	31	BP Transportation (Alaska)
North Slope	410562	Endicott (Oil)	26	Endicott Pipeline Company
Southcentral	228162	Kenai Kachemak (Gas)	50	Kenai Kachemak LLC
North Slope	402294	Kuparuk (Oil)	28	Kuparuk Transportation Company
North Slope	409027	Kuparuk Extension (Oil)	9	Kuparuk Transportation Company
North Slope	410221	Milne Point (Oil)	10	Milne Point Pipeline LLC
North Slope	416172	Milne Point Products	10	Milne Point Pipeline LLC
Southcentral	69354	Nikiski Alaska (Refined oil products)	70	Tesoro Alaska Pipeline Company
North Slope	415700	Northstar Oil	17	BP Transportation (Alaska)
North Slope	415975	Northstar Gas	16	BP Transportation (Alaska)
North Slope	416202	Nuiqsut Natural Gas	14	North Slope Borough
North Slope	411731	Oliktok (Natural Gas Liquids)	28	Oliktok Pipeline Company

\*The length values given in this table are the approximate length of the pipeline system. The length of pipeline on State-leased ROW lands may be shorter. For detailed information about State lands in a ROW, go to the chapter for that pipeline.



#### IV. This Year's Compliance Oversight Activities

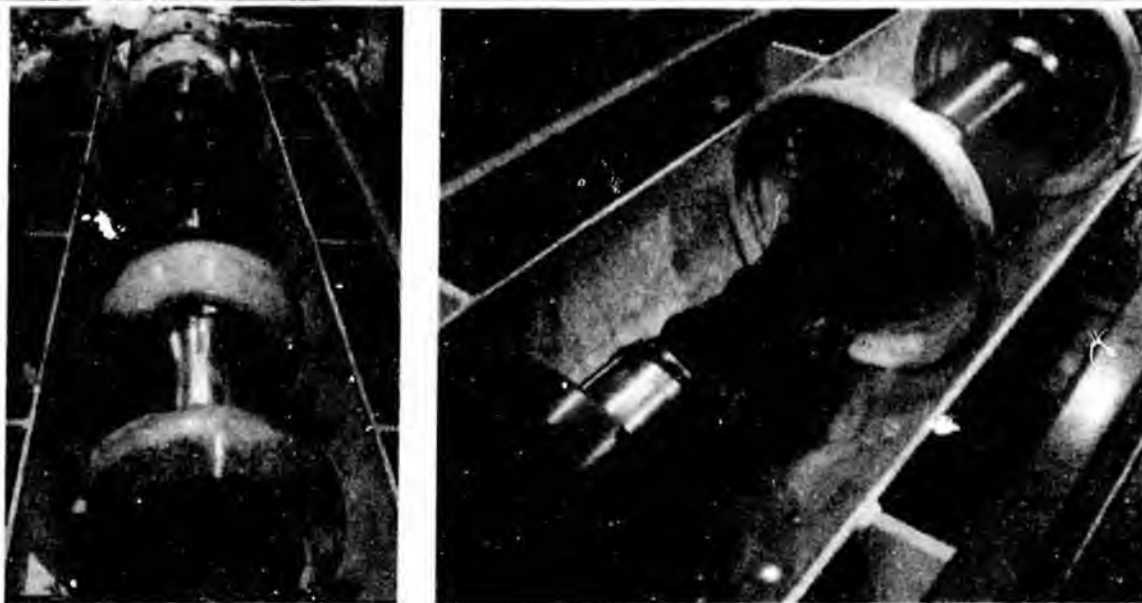
##### 1) Compliance Monitoring

Between January 1, 2005 and June 30, 2006, the SPCO conducted field surveillance for 13 pipeline ROW leases and one utility pipeline grant to get an overview of those pipeline systems and monitor lease compliance in general. Additionally, some surveillance was conducted on special topics such as corrosion, construction practices, a facility re-start, and in-line inspection (ILI) operations. The following table summarizes surveillance field trips for FY06 and the latter half of FY05.

<u>When</u>	<u>ADLs</u>	<u>Pipelines</u>	<u>Surveillance Topics</u>	<u>Surveillant(s)</u>
June 2005	415701 415932 415857	Alpine Oil Pipeline Alpine Diesel Pipeline Alpine Utility Pipeline	General overview; surveillance of State for reduction in ROW width (release of interests)	Novinska Swanson
June 2005	69354	Nikiski Alaska Pipeline (Tesoro)	Turnagain Arm pipe replacement	Perez
June 2005	228162	Kenai Kachemak Gas Pipeline	Anomaly dig	Novinska Swanson
July 2005	228162	Kenai Kachemak Gas Pipeline	Corrosion; revegetation of Happy Valley Extension	Novinska Swanson
August 2005	69354	Nikiski Alaska Pipeline (Tesoro)	General overview	Novinska
September 2005	415472 415965 410562	Badami Sales Oil Pipeline Badami Utility Pipeline Endicott Pipeline	General overview; re-start of Badami pipelines and facilities	Novinska
November 2005	402294 409027 411731	Kuparuk (Oil) Pipeline Kuparuk Extension Pipeline Oliktok Pipeline	General overview; corrosion	Novinska
March 2006	410221 416172	Milne Point (Oil) Pipeline Milne Point Products Pipeline	General overview; follow-up on valve closure incident	Constantine
April 2006	228162	Kenai Kachemak Gas Pipeline	ROW brush clearing activities: Kasilof Extension	Novinska Constantine
May 2006	228162	Kenai Kachemak Gas Pipeline	HDD pilot boring: Kasilof Extension	Novinska
June 2006	415472 415965	Badami Sales Oil Pipeline Badami Utility Pipeline	Observation of monitoring activities at the Sag River weir	Constantine
June 2006	415472 410562 410221 415975	Badami Sales Oil Pipeline Endicott Pipeline Milne Point Oil Pipeline Northstar Oil Pipeline	Surveillance & monitoring program for early detection and abatement of corrosion	Novinska
June 2006	228162	Kenai Kachemak Gas Pipeline	Welding; HDD pipe pull	Novinska
June 2006	69354	Nikiski Alaska Pipeline (Tesoro)	General overview; stream crossings	Novinska Constantine

One key focus of surveillance efforts in FY06, as prescribed by the State Pipeline Coordinator, was corrosion. The compliance oversight team reviewed numerous documents related to corrosion. These included documents submitted by the lessees to the SPCO and other agencies, especially ADEC and USDOT. The compliance oversight team met with lessee representatives to discuss corrosion programs.

ConocoPhillips gave a comprehensive presentation about their corrosion program to the team lead during a November 2005 surveillance of the Kuparuk and Oliktok Pipelines and the Kuparuk Pipeline Extension. BPXA, which is the primary contractor for operation of the Badami, Northstar, Endicott, and Milne Point pipelines, gave the compliance oversight team a similar presentation about their corrosion program in February 2006. The team lead also attended the annual North Slope Charter Agreement meeting in spring 2006 where corrosion was highlighted due to the March 2006 GC-2 crude spill. Corrosion reports submitted to ADEC by ConocoPhillips and BPXA, as required by the Charter, were also reviewed by the team lead. While those reports do not apply directly to common carrier pipelines, they contain information about related corrosion programs.



*In-line inspection tools known as smart pigs are used to detect pipeline defects such as metal loss due to corrosion. The compliance oversight team lead observed smart pigging operations using this smart pig in the Alpine Oil Pipeline in June 2005.*

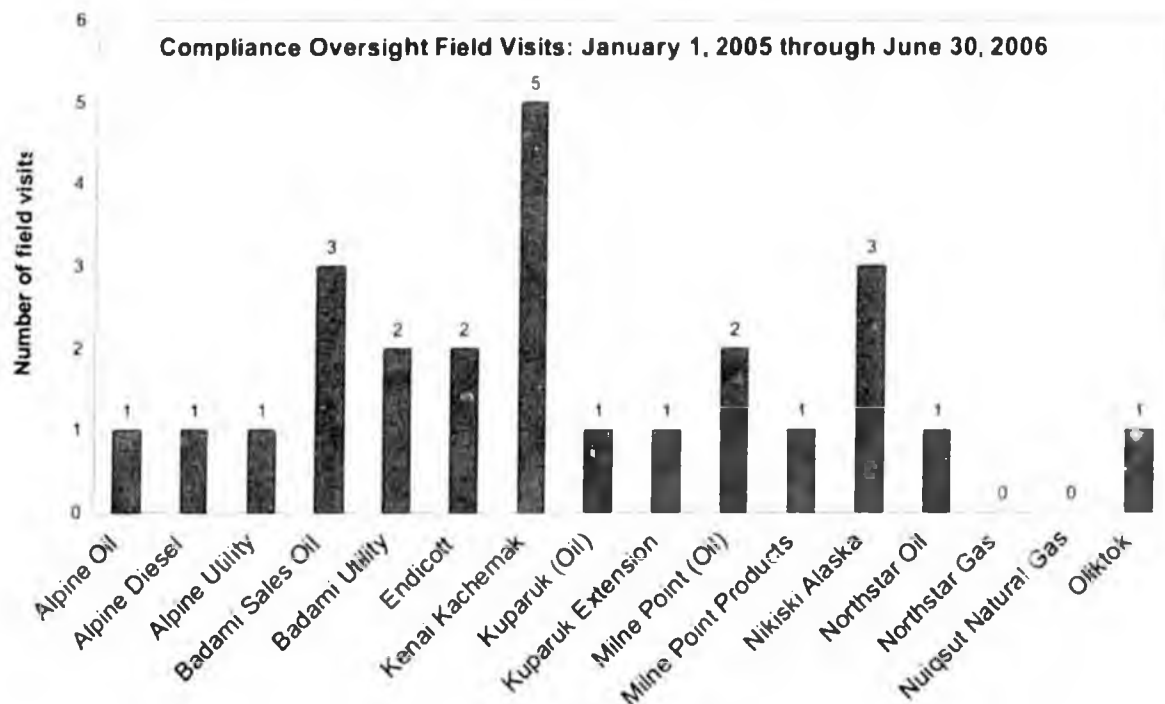
In addition to field surveillance, records reviews, and informational meetings about corrosion, the SPCO requested and received in-line inspection data from the most recent smart pig run through many of the SPCO jurisdictional pipelines. The reports submitted included vendor-supplied ILI data for the Alpine Oil, Alpine Utility, Nikiski Alaska, Kenai Kachemak, Milne Point Oil, Endicott, and Badami Sales Oil pipelines. The compliance oversight team lead, in conjunction with a State engineer from the JPO

Technical and Design Review Section, reviewed the ILI reports and several of the reported metal-loss anomalies. The team lead met with some lessee representatives to discuss corrosion detection and repair practices. As well as ILI practices, the team lead reviewed maintenance (cleaning) pig practices for most SPCO-jurisdictional pipelines. Not all of the pipelines are piggable, and the frequency of maintenance pig use varies.

The compliance oversight team anticipates corrosion will continue to be a key surveillance topic through FY07 as corrosion-related spills and leaks are a significant threat to State-leased pipeline ROW lands and the surrounding environment. The SPCO coordinates with the USDOT to confirm that lessees are meeting requirements for pipeline integrity management. For more information on ILI for each individual pipeline, visit the section of that chapter for Compliance Oversight.

Additional surveillance topics in FY06 included construction activities occurring along the Kenai Kachemak Pipeline on the Kenai Peninsula. Having recently finished the Happy Valley Extension to this pipeline, the lessee was granted a ROW amendment to begin construction on the 4.2-mile Kasilof Extension. Field surveillance of the KKPL has focused on evaluating revegetation and restoration efforts from the Happy Valley Extension and observing construction practices ongoing in summer 2006 to ensure that lease provisions are complied with throughout all phases of pipeline construction, operations, and maintenance.

Other important surveillance topics in FY06 included leak detection, surveillance & monitoring, quality assurance, ROW storage, vehicle traffic, public access, stream crossings, wildlife passage (for above-ground pipelines), maintenance, revegetation of disturbed areas, off-road vehicle traffic, and worker safety.



## 2) Annual Lessee's Reports

In early 2006, the SPCO received annual reports from all sixteen lessees/grantees required to submit them. These ranged in length from 4 pages for the Nikiski Alaska Pipeline to binders several inches thick from other lessees. All lessees received a response and report review from the lease compliance oversight team. Some lessees' reports did not meet minimum requirements and those lessees were asked to submit compliant reports by a deadline in summer 2006. Other reports were accepted but lessees were asked to provide more detail in subsequent years. The following summarizes SPCO review of the sixteen annual reports:

<u>ADL</u>	<u>Pipeline Name</u>	<u>Arrived</u>	<u>Status</u>	<u>Follow-up</u>	<u>Follow-up Date</u>
415701	Alpine Oil	On Time	Accepted	Not Required	n/a
415932	Alpine Diesel	On Time	Accepted	Not Required	n/a
415857	Alpine Utility	On Time	Accepted	Not Required	n/a
415472	Badami Sales Oil	On Time	Accepted	Required	Rec'd June 16, 2006
415965	Badami Utility	On Time	Accepted	Required	Rec'd June 16, 2006
410562	Endicott	On Time	Accepted	Required	Rec'd June 16, 2006
228162	Kenai Kachemak	On Time	Accepted	Not Required	n/a
402294	Kuparuk	On Time	Accepted	Not Required	n/a
409027	Kuparuk Extension	On Time	Accepted	Not Required	n/a
410221	Milne Point	On Time	Accepted	Required	Rec'd June 16, 2006
416172	Milne Point Products	On Time	Accepted	Required	Rec'd June 16, 2006
69354	Nikiski Alaska	Late	In review	Required	Rec'd July 17, 2006, late
415700	Northstar Oil	On Time	Accepted	Required	Rec'd June 16, 2006
415975	Northstar Gas	On Time	Accepted	Required	Rec'd June 16, 2006
416202	Nuiqsut Natural Gas	Late*	Not Accepted	Requested	Past due June 30, 2006
411731	Oliktok	On Time	Accepted	Not Required	n/a

\*The 2004 Nuiqsut report was over a year late and arrived shortly before the 2005 report, also late.



The Endicott Pipeline connects BP's Endicott Development to TAPS. Endicott is developed on man-made islands in the Beaufort Sea connected by a causeway with breaching structures.

### 3) 2006 Annual SPCO Compliance Oversight Report

The SPCO report for FY06 differs from prior years. This year's report is designed to be streamlined and contain information more useful to lessees, JPO employees, other agencies, and the public. This report is divided into three main sections: introduction, Southcentral pipelines, and North Slope pipelines. Some pipeline leases are grouped and reported on together for convenience and to avoid repetition (for example, the two Alpine pipeline leases and one Alpine pipeline grant are grouped together into Chapter 3). The report contains the following chapters:

- |                                  |                                 |
|----------------------------------|---------------------------------|
| 1) Kenai Kachemak Pipeline       | 6) Endicott Pipeline            |
| 2) Nikiski Alaska Pipeline       | 7) Northstar Pipelines          |
| 3) Alpine Pipelines              | 8) Milne Point Pipelines        |
| 4) Kuparuk and Oliktok Pipelines | 9) Nuiqsut Natural Gas Pipeline |
| 5) Badami Pipelines              |                                 |



*The Milne Point Oil (rear) and Products (front) pipelines connect the Milne Point Development, east of Prudhoe Bay, to the Kuparuk and Oliktok Pipeline Systems, respectively, approximately 10 miles to the south.*

Each chapter contains the following headings:

- o *Lease and Right-of-Way Overview*: contains information about the State ROW lease agreement, State lands in the Leasehold, environmental issues in the ROW, and the pipeline system. (Note that not all of the pipeline system

may be on State lands covered by the ROW lease. Often pipelines cross land owned by others including the Federal government, local governments, Native corporations, or private landowners.)

- *Lessee's Annual Report*: summarizes SPCO review of the lessee's annual report and information provided by the lessee. An overview of the lessee's reported surveillance & monitoring conditions is also provided. Additional information can be accessed through the lessee's annual report located in each ROW case file. The *Lessee's Surveillance & Monitoring* heading within this section describes the results of the lessee's surveillance & monitoring program for the year, including any anomalous conditions discovered during inspection.
- *SPCO Activity*: summarizes SPCO activities for the Fiscal year, including lease administration, compliance oversight, and surveillance summaries, as applicable. Some activities are included for the latter half of FY05 for information. This section also includes information about the latest appraisal of State lands in the ROW and when the next appraisal is due.
- *Upcoming Issues*: looks forward to the following year for lessee and SPCO planned activities.
- *Contact Information*: provides contact information for the registered agent and other designated representatives of each ROW lessee as required by the ROW lease agreements.

The SPCO annual report is staggered six months apart from the lessee's annual report. This gives the compliance oversight team time to analyze information in the lessee's report for the prior year for inclusion in the SPCO report and provides the lessee with feedback half way through the calendar year. The report period covered for this annual report is FY06 which began July 1, 2005 and ended June 30, 2006. Some information, especially related to lessee and SPCO activities, is included for the latter half of FY05. This is because the lessee's reports submitted in 2006 cover calendar year 2005 and some SPCO activities in the latter half of FY05 did not fall within the scope of the most recent SPCO annual report.

## **V. Missions and Measures**

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Missions & Measures is the tool the Governor's Office uses to set goals, measure progress, and be accountable to Alaskans for achieving desired results. The Office of Management and Budgeting (OMB) within the Governor's Office implemented Missions and Measures within its vision to "ensure the State's resources are invested in a way that produces results which advance the governor's priorities." For information about the

Missions and Measures program, go to the OMB website at [www.gov.state.ak.us/omb/results/](http://www.gov.state.ak.us/omb/results/).

Missions and Measures for the SPCO describe why the agency exists, its major responsibilities, results to be produced, how the agency will get those results, and how both the agency and Alaskans will know that success is being achieved.



**SPCO Mission**

*To encourage and facilitate the development and sound operation of pipelines on State land.*

**Desired Result:**

*Assure pipelines administered by the State Pipeline Coordinator's Office are designed, constructed, operated, and maintained in a safe and environmentally-sound manner consistent with lease requirements and applicable laws.*

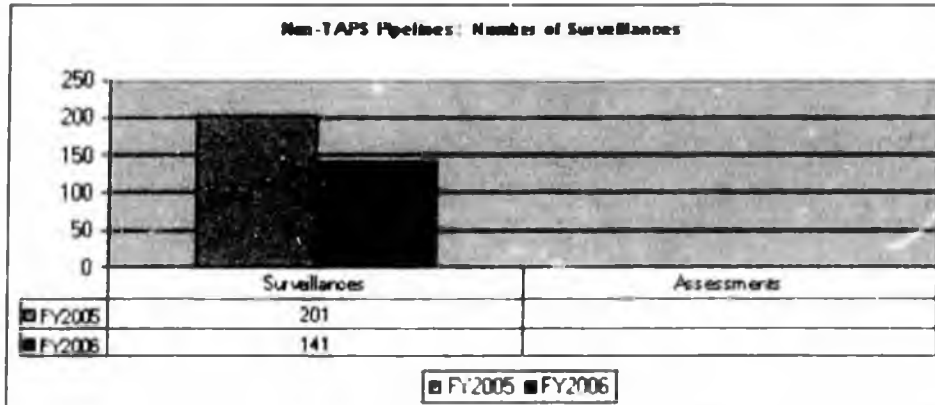
SPCO Missions & Measures information and the measuring tape graphic were accessed on the State OMB website on June 12, 2006.

**SPCO Core Services:**

- o *Process applications under the Alaska Lands Act and Right-of-Way Leasing Act and negotiate and deliver pipeline and other right-of-way leases in a manner that serves the State's interests.*
- o *Administer leases under SPCO jurisdiction including revenue, permitting, authorizations, and oversight of the construction, operations, maintenance, and termination of pipelines on State leased land.*
- o *Coordinate SPCO Trans-Alaska Pipeline System Lease oversight with the U.S. Bureau of Land Management to ensure that TAPS remains available for delivery of North Slope crude oil to market.*
- o *Keep the public informed of SPCO activities.*

To assess how the SPCO is performing under its mission and desired results, targets and measures are developed. For the SPCO-administered pipelines other than TAPS, the target is to "perform, document, and approve operational and project

activities to ensure compliance with lease requirements and applicable laws through surveillances, technical reviews/reports, and assessments." The number of surveillances conducted is used to measure the SPCO's performance under this target. This target and measure is new for FY06, though data is provided for FY05 for comparison.

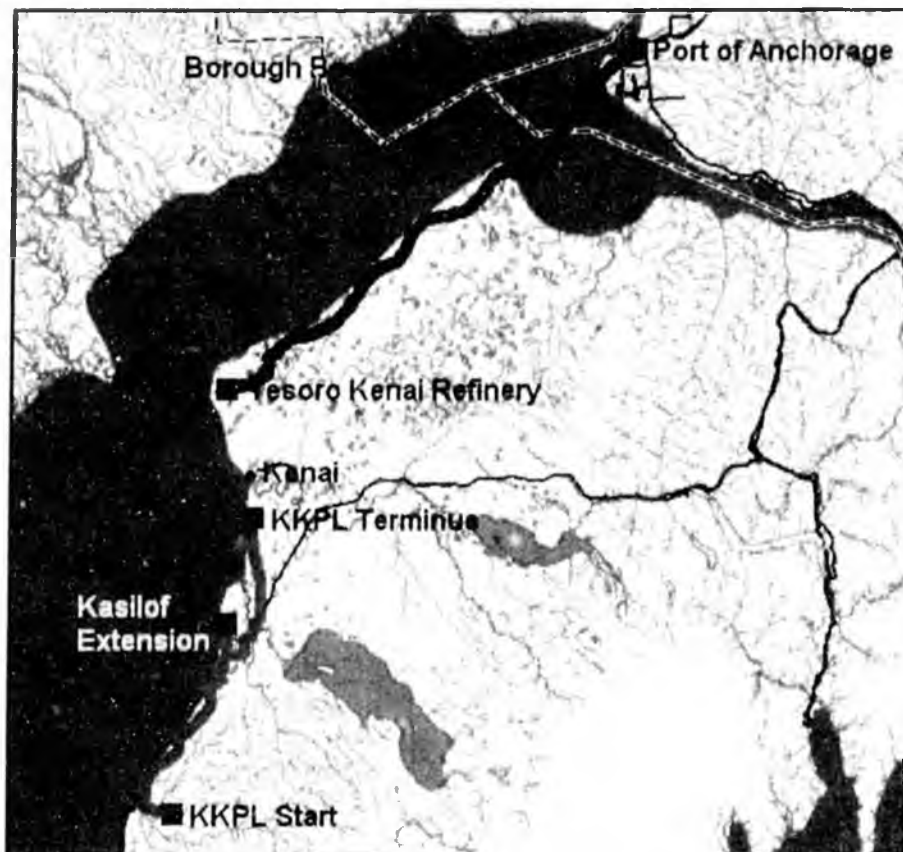


Caption from the OMB website: "Data indicates a decline in the total number of surveillances conducted. (down from 201 surveillances conducted during FY05 to 141 surveillances during FY06). This was due to SPCO staffing changes during FY06 to recruit and train two new Natural Resource Specialists to replace former staff that left for other jobs. Additionally, surveillance procedures were modified to refine and improve how data is collected and reported by SPCO field staff. No assessments were completed during FY05 or FY06 because sufficient SPCO surveillance and other data are not yet available for adequate trend analysis and evaluation."

## Southcentral Pipelines

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1. Kenai Kachemak Pipeline 21
  2. Nikiski Alaska Pipeline 35
- 



**Southcentral Pipelines:**

- Kenai Kachemak Pipeline      ■ Nikiski Alaska Pipeline
-

**SOUTHCENTRAL PIPELINES**

**1 Kenai Kachemak Pipeline**

**ADL # 228162**

- 1.1 Lease and Right-of-Way Overview
  - 1.1.1 Kenai Kachemak Corridor
  - 1.1.2 Kenai Kachemak Gas Pipeline
  - 1.1.3 Happy Valley Extension
  - 1.1.4 Kasilof Extension
- 1.2 Lessee's Annual Report
  - 1.2.1 SPCO Review
  - 1.2.2 Lessee's Activities
  - 1.2.3 Lessee's Surveillance & Monitoring
- 1.3 SPCO Activity
  - 1.3.1 Lease Administration
  - 1.3.2 Compliance Oversight
  - 1.3.3 Summary of Lease Compliance Observations: June 2005
  - 1.3.4 Summary of Lease Compliance Observations: July 2005
  - 1.3.5 Summary of Lease Compliance Observations: April 2006
  - 1.3.6 Summary of Lease Compliance Observations: May 2006
  - 1.3.7 Summary of Lease Compliance Observations: June 2006
  - 1.3.8 Appraisals
- 1.4 Upcoming Issues
  - 1.4.1 Lessee's Activities
  - 1.4.2 SPCO Compliance Oversight
- 1.5 Contact Information



*The Kenai Kachemak Pipeline transports natural gas on the Kenai Peninsula.*

## **1.1 Lease and Right-of-Way Overview**

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### **1.1.1 Kenai Kachemak Corridor**

The Kenai Kachemak Pipeline transports natural gas from production areas in the south to distribution networks in the north on Alaska's Kenai Peninsula. It first transported natural gas on September 5, 2003. The first phase of the KKPL, completed in 2003, is approximately 31 miles. The total length of the KKPL, including the recent Happy Valley Extension and Kasilof Extension (construction in progress), is approximately 50 miles. 42 miles are on State land. The entire pipeline, except for horizontal directional drilling (HDD) locations, is buried underground in a backfilled trench. More pipeline-specific information is provided later in this section.

The 30-year ROW lease agreement, if not renewed, will expire November 25, 2032. Landowners in the ROW include the State of Alaska, Kenai Peninsula Borough, Native corporations, and other private landowners. The total construction ROW of State lands leased to KKPL is 294.6 acres (this construction ROW acreage will later be reduced to a smaller operations ROW of 102.3 acres). State lands include highway ROWs through the DOTPF, section line easements, and navigable waterways. DOTPF roads include the Sterling Highway, Kalifornsky Beach Road, and Coho Loop Road.

KKPL LLC is the ROW leaseholder. KKPL is a limited liability company owned by Marathon Oil Company and GUT LLC, a wholly owned subsidiary of Unocal. Norstar, a subsidiary of Enstar, is the primary contractor to KKPL LLC for the operations and maintenance of the pipeline. Marathon is the primary contractor for construction activities for the Kasilof Extension. The KKPL Quality Program, which documents how the lessee achieves compliance with the State ROW lease agreement, was approved by the State Pipeline Coordinator on November 25, 2002. The lessee is responsible for overall implementation of the program.

Currently, the pipeline ROW is in construction width (60 feet in most places) to allow the lessee to use State lands necessary for pipeline construction. The ROW is wider at river crossings and horizontal directional drilling sites. Eventually these State lands used as construction ROW will be released from the lease and the operations ROW will be 20 feet wide on State land.

*Populated Areas:* Some segments of the KKPL pass through neighborhoods on the Kenai Peninsula. Some populated areas are considered High Consequence Areas for the purpose of USDOT regulations. (There are seven HCAs in total, some of which are designated as such for environmental reasons.)

*River Crossings:* The KKPL was bored underneath river crossings using HDD and crosses the Kasilof and Ninilchik Rivers, Crooked Creek, Coal Creek, and multiple unnamed creeks, streams, and gullies.

*Extensions:* The KKPL is being built in phases. Phase 1 was completed in 2003, Phase 2 was completed in 2004, and Phase 3 is currently in progress. These three phases of construction are further discussed below.

*Lease:* An electronic copy of the KKPL lease agreement is available for public viewing at the SPCO website: <http://www.jpo.doi.gov/SPCO/SPCO.htm>.



*In summer 2006, construction is in progress on the 4.2-mile Kasilof Extension to the KKPL. This picture shows a segment of pipeline being placed in the newly-dug trench.*

### **1.1.2 Kenai Kachemak Gas Pipeline (ADL 228162)**

The 12-inch Kenai Kachemak Pipeline begins at the Happy Valley production pad. It was originally constructed as an approximately 31-mile segment beginning at the Susan Dionne Production Pad and ending at the Marathon Oil Company 500 Master Meter Building. It was constructed with steel pipe a minimum of 0.330 inches thick. At river crossings, the pipe thickness increases to 0.500 inches. The pipeline is coated with an external layer of fusion-bonded epoxy to prevent soil-to-pipe contact. The maximum operating pressure of the line is 1,480 psig.

The pipeline transports natural gas (99.50% methane) produced at fields in Cook Inlet to a tie-in point where the gas is transferred for further transport. Currently, some natural gas is being distributed from the KKPL for local use.

The entire pipeline is piggable, and the operator has used smart pigs, or in-line inspection tools to check pipeline conditions. KKPL first ran a baseline ILI tool through the pipeline in 2005 and discovered one anomaly which was further investigated. The

operator does not use cleaning or maintenance pigs except to prepare the pipeline for ILI tools. Since the line is buried, a cathodic protection system is installed and maintained per USDOT regulations.

KKPL is a member of the "Locate Center," a free service that allows the public to locate buried pipelines before excavation. For more information about locates, see 1.2.3, Lessee's Surveillance & Monitoring.

### **1.1.3 Happy Valley Extension (Amendment to ADL 228162)**

The total length of the Happy Valley Extension, built in 2004, is approximately 15 miles. Approximately 6.3 miles are on State land, subject to the AS 38.35 Right-of-Way Leasing Act. The remaining miles of non-State land are not part of the ROW amendment authorized by the DNR Commissioner on June 16, 2004. The extension began at the previous terminus of the KKPL near the Susan Dionne Pad, which is near Milepost 128 of the Sterling Highway and approximately 5 miles north of Ninilchik. The pipeline then follows the Sterling Highway on its east side and crosses five small and/or intermittent streams via HDD. An HDD crossing of the Ninilchik River started in the Sterling Highway ROW, north of the river, and terminated within a section line easement on the south side of the river. The extension provides for delivery of natural gas from the Happy Valley drill site to the existing Southcentral Alaska natural gas infrastructure.

The temporary construction ROW included in the Happy Valley amendment contains approximately 48 acres of State lands on 30 feet either side of the ROW centerline. Once the release of interests is completed for the construction ROW, the operations ROW will contain approximately 16 acres in a 20-foot corridor.

### **1.1.4 Kasilof Extension (Amendment to ADL 228162)**

KKPL LLC is in the process of connecting a new Kasilof Extension to the existing pipeline. The extension is being constructed from 6-inch diameter coated steel pipe with a maximum pressure of 1,480 psig to transport natural gas into the KKPL. The extension begins at the Kasilof South Pad and ends at pipeline milepost 18.125 of the existing KKPL, at the intersection of Cohoe Loop Road and milepost 114.3 of the Sterling Highway. The ROW crosses one stream, at least one gully, and Bottleneck Lake via HDD. All 4.2 miles of the Kasilof Extension are on State land.

On April 24, 2006, the DNR Commissioner amended the KKPL lease to include Phase 3 of construction: the Kasilof Extension. The construction ROW for the Kasilof Extension extends 30 feet on either side of the ROW centerline and contains approximately 35.6 acres of State lands. Most of the State land is within the Cohoe Loop Road ROW, though 285 feet is located in the Sterling Highway ROW at the tie-in point. The permanent (operations) ROW will be reduced to 20 feet in width and will contain approximately 10.3 acres of State land. Construction is ongoing during the summer 2006, and all construction is occurring within the existing DOTPF ROW for Cohoe Loop Road. SPCO representatives have been present to observe some aspects of construction.

Two bald eagle nests, unknown to KKPL LLC at the time of their ROW amendment application, were identified in spring 2006 along Cohoe Loop Road within the Kasilof Extension route. KKPL LLC is working with the U.S. Fish & Wildlife Service (USF&WS) in order to mitigate potential impacts to the nesting sites by voluntarily using HDD under affected trees. KKPL LLC and USF&WS have agreed to the minimum buffer for the HDD to be 330 feet from the identified nest trees. This buffer could be increased to 660 feet at the discretion of USF&WS if the nests become active.

In a letter to the SPCO dated April 13, 2006, KKPL LLC requested to modify their application to add two additional HDD construction areas for mitigating potential Bald eagle nesting sites and a third HDD construction area for installing pipeline in a steep-cut crossing area that has an intermittent stream. At each HDD construction area, there are two temporary work areas (100 feet by 300 feet) on the boring (entry) and the receiver (exit) pits to accommodate HDD equipment. Each HDD construction area requires approximately 1.38 acres. For the three HDD construction areas, KKPL LLC requested an increase of 4.1 acres, more or less, of construction ROW acreage.

The additional 4.1 acres of State land during construction is slightly more than 10 percent of the amount in KKPL's original amendment application (approximately 31.5 acres). The additional construction acreage is entirely within the Cohoe Loop Road ROW and will be used to mitigate potential impacts to Bald eagle nesting sites and to minimize erosion from the steep-cut crossing area that has an intermittent stream. The additional acreage is temporary and does not increase acreage required for the operations ROW.

## **1.2 Lessee's Annual Report**

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The SPCO received a *2005 KKPL Annual Report* document from Norstar Pipeline Company, operator of the KKPL, on time on January 31, 2006. Annual reporting is a requirement of the KKPL ROW lease, and the seven requirements for annual reporting are listed in the Introduction Section. The KKPL report includes about twelve pages of qualitative information and about eight pages of quantitative data including pipeline pressure, flow, and temperature readings, hydrogen sulfide sampling data, coupon data, and cathodic protection readings.

### **1.2.1 SPCO Review**

After thoroughly reviewing the lessee's 2005 report, the SPCO accepted it. However, some minor improvements are possible and the State Pipeline Coordinator has required the lessee to include additional information and clarification in their annual report for 2006. There was a lack of basic information such as the quantity of gas transported for the year, a summary of any known oil or hazardous substances discharges, and information associated with the Kasilof Extension construction plans. In a letter dated

March 28, 2006, the State Pipeline Coordinator reminded the lessee of the seven requirements for annual reporting (listed in the Introduction Section of this report).

### **1.2.2 Lessee's Activities**

The lessee's annual report contains very little information about pipeline activities for the year, however, intensive lease administration and compliance oversight activities in FY06 provided the SPCO with sufficient information on KKPL activities. Below is some information presented in the lessee's 2005 report:

*Production:* During 2005, the Paxton Pad came on-line, increasing the number of production pads feeding natural gas into the KKPL to a total of five.

*Operations:* The pipeline's operator, Norstar, performed line locates, leak surveys, pipeline patrols, and routine maintenance.

*Maintenance:* Norstar cycled and lubricated pressure relief valves on July 23, 2005 as required by USDOT regulations.

*Restoration of Disturbed Areas:* Areas of the KPPL Phase 1 construction that were seeded in 2004 had acceptable revegetation in 2005. Phase 2, the Happy Valley Extension, was reseeded. For more info, see 1.3.2, Compliance Oversight.



*This photo depicts typical KKPL ROW. Yellow line markers locate the buried pipeline.*

### **1.2.3 Lessee's Surveillance & Monitoring**

The KKPL Surveillance & Monitoring Program requires the pipeline operator to monitor conditions that could impact pipeline integrity, public health and safety, and the environment. The KKPL Surveillance & Monitoring Program was approved by the State

Pipeline Coordinator on August 27, 2003. The lessee is required to comply with the program during pipeline operations and maintenance.

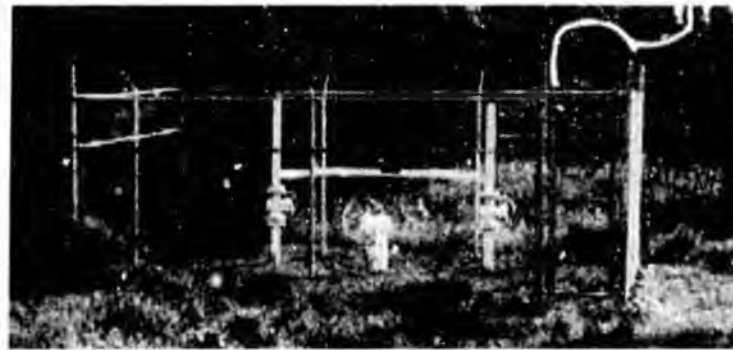
*Line Locates:* Because the KKPL passes through populated areas, the lessee participates in the *OneCall* damage prevention program. Norstar's affiliate Enstar receives locate requests from a centralized Locate Call Center. During 2005, Norstar reports receiving 444 locate requests which resulted in 148 onsite locates and 25 high pressure standbys. These peaked over the summer construction season with the highest numbers in July through October.

*In-Line Inspection:* In March 2005, Norstar ran a magnetic flux leakage and geometry inspection tool through the KKPL. Prior to the smart pig run, two foam pigs and one "six-disc polyurethane b-directional pig" cleaned the pipeline. Approximately 1,300 gallons of distillate were removed from the KKPL during cleaning. The final report from the pig vendor indicated no geometry or deformation issues, but did predict one metal loss anomaly. A portion of the pipeline was excavated at the location. The SPCO surveillance team visited the dig site. For more info, see 1.3.2, Compliance Oversight.

*Internal Corrosion Monitoring:* Norstar reports regularly sampling gas for quality and taking dew points at the pads and terminus to monitor water content in the pipeline.

*Cathodic Protection:* The lessee inspects rectifiers a minimum of six times per year at regular intervals. Pipe to soil and coupon current readings are taken periodically at three locations along the KKPL. A fourth coupon station was added in summer 2005. The only anomaly found in these inspections was a short at one of the AC zinc grounding cells. It was repaired.

*Aerial Surveillance:* Norstar employees conducted 29 aerial surveillance flights of the constructed KKPL in 2005. During these flights, personnel check pipeline and ROW conditions and look for encroachments or construction activities in the ROW. Norstar conducts regular aerial surveys a minimum of once per month in the winter. These increase in frequency during summer months. Additionally, the ROW is monitored during routine operations and maintenance.



*The KKPL valves are enclosed in fencing, locked, and marked with warning signs to inform the public and protect equipment.*

## 1.3 SPCO Activity

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### 1.3.1 Lease Administration

In Fiscal Year 2006, a significant accomplishment of the lease administration team was the review and approval of an amendment to the KKPL lease to include the Kasilof Extension. The amendment process included a public review and comment period. The lease administration team wrote the Commissioner's Analysis and prepared documents for signature. On April 24, 2006, ADNR Commissioner Michael L. Mege signed the amendment, officially incorporating the Kasilof Extension into the KKPL ROW. The amendment added approximately 35.6 acres of State land to the KKPL lease.

*Construction:* The SPCO reviewed a draft *Construction Execution Plan for the Kasilof Extension*, provided feedback, and approved the final plan on May 5, 2006. The SPCO is currently receiving weekly construction progress updates and continues conducting frequent surveillance of construction practices.

*Design Basis:* The JPO Technical and Design Review Section also participated in the amendment process through an engineering review of the proposed Design Basis and Criteria for the new pipeline segment. The lessee is required to maintain the KKPL to standards in the Design Basis. The SPCO conducted a technical review of the pipeline design for structural adequacy, pipeline integrity, safety, potential impacts on the environment, and potential effects on fish and wildlife, their habitat, and subsistence uses. The Design Basis was approved on April 12, 2006. The State Pipeline Coordinator must approve any changes to the Design Basis before implementation.

### 1.3.2 Compliance Oversight

Between January 1<sup>st</sup>, 2005, and June 30, 2006, the compliance oversight team conducted five field surveillances of the KKPL ROW to generally assess lease compliance, observe activities related to the Happy Valley Extension revegetation and Kasilof Extension construction, and observe a potential metal loss anomaly dig.

*Anomaly Dig:* On June 15, 2005, the team observed a pipeline excavation taking place east of the Sterling Highway and south of Fleetwood Avenue. A magnetic flux leakage in-line inspection had identified an anomaly described as external wall loss of approximately 19%, with a potential instrument error of + or - 10%. Due to the error in ILI measurements and the potential to recover contractor warranty costs, KKPL decided to excavate and examine the anomaly location. When the surveillance team arrived on site, a contractor had largely completed the excavation process. The team reported that an excavator dug a 45-foot by 6-foot trench and workers used hand shovels to complete final exposure of the pipe. The surveillance team observed contractors searching for the anomaly location on a five-foot section of pipe. No anomaly was found. Upon completion of the inspection, the pipe was re-coated and re-buried. To follow up, the pipeline operator sent the SPCO a "KKPL Anomaly Inspection Report" on July 22, 2005. The surveillance team completed reports ANC-05-S-049 through 052, all of which noted satisfactory conditions.



*In July, 2005, the compliance oversight team observed a pipeline integrity dig at a potential external wall loss location identified in an in-line inspection run. No anomaly was found*

**Happy Valley Extension Revegetation:** On July 26, 2005, the compliance oversight team conducted field surveillance of the KPPL ROW to observe revegetation activities along the newly constructed Happy Valley Extension ROW. Additionally the team looked at erosion, sediment control, and stream, river and floodplain crossings. Overall, the team did not find any major deficiencies in the restoration or revegetation. The surveillance completed reports ANC-05-S-57 through ANC-06-S-59, all of which reported satisfactory conditions.

**Cathodic Protection:** On August 1, 2005, the compliance oversight team lead visited a representative from the lessee in Anchorage to review part of the corrosion program. They discussed the pipeline's cathodic protection system, which prevents external corrosion. They also discussed coupons, pigging, and maps. Notes from this office visit are included as part of the surveillance field notes from the July 26<sup>th</sup> trip attached to surveillance report #ANC-05-S-057.

**Kasilof Extension Brush Clearing:** On April 17, 2006, the compliance oversight team conducted surveillance of ROW brush clearing and grubbing activities in preparation for construction of the Kasilof Extension. They also drove along the existing KKPL ROW to get a general overview of the pipeline system. The team observed that ROW clearing activities appeared to comply with the conditions of the DOTPF permit for clearing within the Coho Loop Road ROW. The team observed traffic control, surveying, staking, clearing, and grubbing. They also stopped at the sites of four planned HDD locations to

take baseline photos before disturbance by the HDD process. The surveillance field notes (attached to report ANC-06-023) describe the work being conducted in a safe and workmanlike manner. No unsatisfactory conditions were noted.

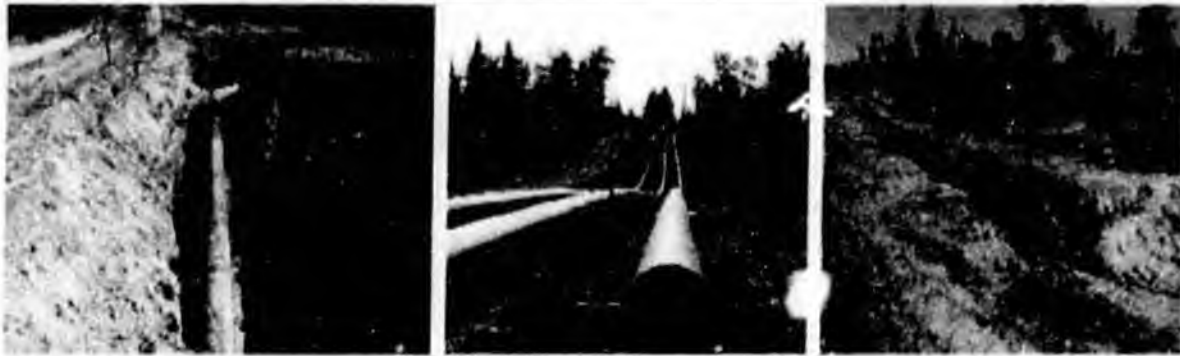
**Bottleneck Lake HDD:** On May 21, 2006, the compliance oversight team lead conducted surveillance of HDD practices at Bottleneck Lake. He also visited areas of the ROW previously cleared and grubbed. The surveillant completed reports ANC-06-S-075 through ANC-06-S-077. Reports 075 and 076 documented satisfactory conditions, while report 077 was an unsatisfactory condition under lease Section 9(b).

The unsatisfactory condition occurred when environmentally-benign HDD drilling fluid was inadvertently discharged into fish-bearing Bottleneck Lake through a hole in the HDD bore known as a "frac-out." The SPCO-approved *Construction Execution Plan for the Kasilof Extension* stated that the HDD contractor would have a spill prevention plan in place "that specifically covers the inadvertent release of drilling fluids." When the surveillant asked to see a copy of this plan, no plan could be located by the lessee's representatives. The HDD operation was voluntarily halted while the HDD contractor, Alaska Road Boring, prepared a written plan, which was submitted to the SPCO via email promptly two days later. HDD work then continued. A Marathon representative told the surveillant that appropriate agencies had been notified of the drilling fluid discharge. This HDD drilling fluid, *TRU-BORE®*, is an environmentally-benign mixture of clay and water that was not expected to adversely affect fish or wildlife.

**HDD Pipe Pull:** On June 2, 2006, the compliance oversight team lead observed HDD pipe pull at Bottleneck Lake (part of the Kasilof Extension). He reviewed general construction, equipment, specialty items, materials, and work in progress. When the surveillant arrived, the pipe to be pulled had already been welded into one continuous 1,340-foot string and placed on newly-made rollers. The surveillant looked at several weld locations, including one in progress and some that had already been coated. The surveillant also observed personnel "jeeping" the coating to look for defects known as "holidays." The surveillant reported everything related to welding and pipe pull that he observed was "conducted in a safe and workmanlike manner." Incidentally, a vandalism incident had occurred the night before when a fire extinguisher was discharged onto the surface of Bottleneck Lake and a portable toilet was tipped over the roadside pullout guardrail and left partway down the embankment. A police car arrived on site while the surveillant was there. The surveillant signed reports ANC-06-S-078 through ANC-06-S-082, all of which were satisfactory.

### 1.3.3 Summary of Lease Compliance Observations: June 2005

<u>Lease</u>	<u>Stipulation</u>	<u>Description</u>	<u>Observation</u>	<u>Report #</u>
KKPL	1.5.1	Maintenance to Design Criteria	Satisfactory	ANC-05-S-049
KKPL	1.6.1	Surveillance & monitoring	Satisfactory	ANC-05-S-050
KKPL	1.13.1	Annual comprehensive report	Satisfactory	ANC-05-S-051
KKPL	2.2.1.1	Minimize surface disturbance	Satisfactory	ANC-05-S-052



These three photos were taken on SPCO surveillance during 2004 construction of the Happy Valley Extension. From left to right: pipe laid in trench; pipe welded together for placement in trench; pipe ready for placement in trench.

**1.3.4 Summary of Lease Compliance Observations: July 2005**

<u>Lease</u>	<u>Stipulation</u>	<u>Description</u>	<u>Observation</u>	<u>Report #</u>
KKPL	1.3.1	Construction plan	Satisfactory	ANC-05-S-059
KKPL	1.6.1	Surveillance & monitoring	Satisfactory	ANC-05-S-057
KKPL	2.7.1	Stabilize disturbed areas	Satisfactory	ANC-05-S-058

**1.3.5 Summary of Lease Compliance Observations: April 2006**

<u>Lease</u>	<u>Section</u>	<u>Description</u>	<u>Observation</u>	<u>Report #</u>
KKPL	8(d)	State access to property & records	Satisfactory	ANC-06-S-023

<u>Lease</u>	<u>Stipulation</u>	<u>Description</u>	<u>Observation</u>	<u>Report #</u>
KKPL	2.7.3	Restoration of State lands	Satisfactory*	ANC-06-S-046

\*Conditions were satisfactory, but follow-up was required on an area of backfill subsidence. The SPCO was notified via email that the backfill subsidence problem has been corrected.

**1.3.6 Summary of Lease Compliance Observations: May 2006**

<u>Lease</u>	<u>Section</u>	<u>Description</u>	<u>Observation</u>	<u>Report #</u>
KKPL	9(b)	Requirements imposed upon lessee's contractors ensured by lessee	Unsatisfactory	ANC-06-S-077
KKPL	14(a) 14(b)	Approved Quality Program Approved Construction Plan	Satisfactory	ANC-06-S-076

<u>Lease</u>	<u>Stipulation</u>	<u>Description</u>	<u>Observation</u>	<u>Report #</u>
KKPL	2.2.1.1 2.2.1.1.2	Minimal surface disturbance Blading (grubbing) as approved	Satisfactory	ANC-06-S-075

**1.3.7 Summary of Lease Compliance Observations: June 2006**

<u>Lease</u>	<u>Section</u>	<u>Description</u>	<u>Observation</u>	<u>Report #</u>
KKPL	14(b)	Approved construction plan	Satisfactory	ANC-06-S-078
KKPL	40	Compliance with laws and regulations	Satisfactory	ANC-06-S-079
<u>Lease</u>	<u>Stipulation</u>	<u>Description</u>	<u>Observation</u>	<u>Report #</u>
KKPL	1.3.1	Approved construction plan	Satisfactory	ANC-06-S-080
KKPL	1.11.1	Regulation of access	Satisfactory	ANC-06-S-081
	1.11.2	Unrestricted public access		
KKPL	3.1.1.1	Construction: sound engineering	Satisfactory	ANC-06-S-082
	3.1.1.2	Design Criteria, and approved supporting documents		

**1.3.8 Appraisals**

According to AS 38.35, pipeline ROW lessees must pay fair market value to lease State lands in the ROW. Per the KKPL lease, a new appraisal is due every five years. The most recent appraisal of the KKPL ROW, performed by MacSwain Associates, was approved by ADNR on July 28, 2004. These appraisal values cover the original KKPL, Happy Valley Extension, and the new Kasilof Extension. The State acreage and annual rental fees for the KKPL ROW follow:

<u>Kenai-Kachemak Pipeline</u>	<u>ADL #</u>	<u>State Acres</u>	<u>Estimated Market Rent</u>
Gas Pipeline Construction ROW	228162	294.6	\$47,350

**1.4 Upcoming Issues****1.4.1 Lessee's Activities**

KKPL, Norstar, and their contractors plan to finish the Kasilof Extension in 2006 and begin transporting gas from the Kasilof South pad through the KKPL.

**1.4.2 SPCO Compliance Oversight**

The lease compliance oversight team plans to conduct field surveillance of the Kasilof Extension in July 2006. Additional field surveillance may be conducted in FY07. The lessee's 2006 annual report, due January 31, 2007, will also be reviewed.

**1.5 Contact Information**

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The KKPL ROW lease requires the lessee to designate in writing a registered agent and field representative.

*Registered Agent*            Mr. A. Ben Schoffman  
   President  
   Kenai Kachemak Pipeline, LLC  
   P.O. Box 196168  
   Anchorage, AK 99519-6168

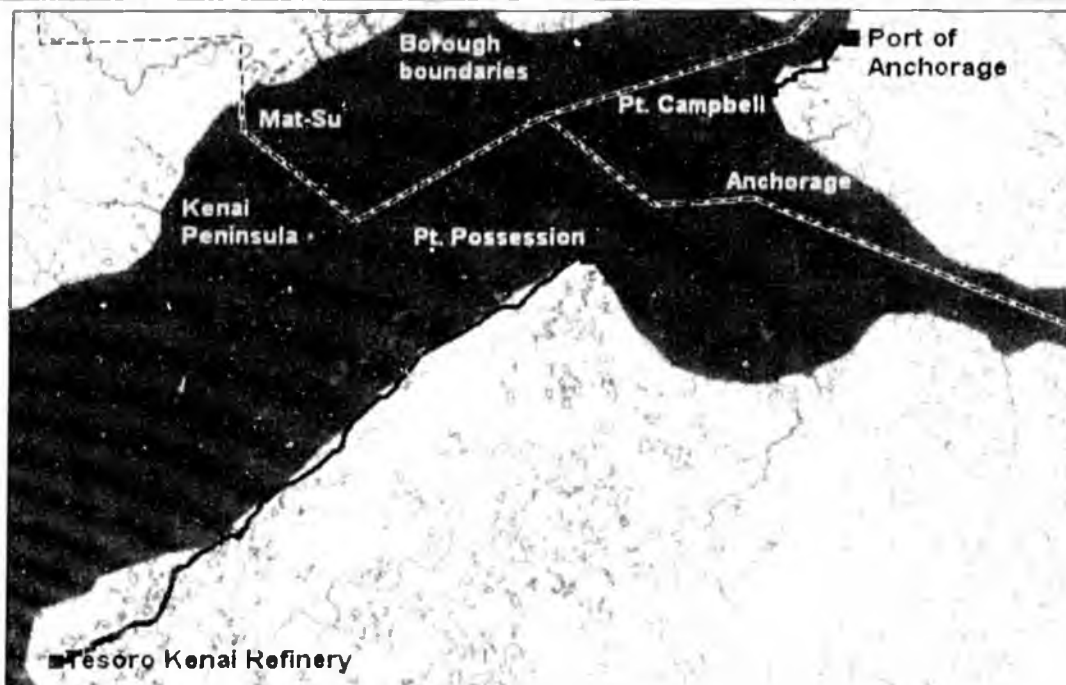
*Field Representative*        Mark Slaughter  
   Operations Analyst  
   NORSTAR  
   P.O. Box 190288  
   Anchorage, AK 99518-0288

## SOUTHCENTRAL PIPELINES

### 2 Nikiski Alaska Pipeline (Tesoro)

ADL # 69354

- 2.1 Lease and Right-of-Way Overview
  - 2.1.1 *Nikiski Alaska Corridor*
  - 2.1.2 *Petroleum Products Pipeline*
- 2.2 Lessee's Annual Report
  - 2.2.1 *SPCO Review*
  - 2.2.2 *Lessee's Activities*
  - 2.2.3 *Lessee's Surveillance & Monitoring*
  - 2.2.4 *Recent Realignments and Replacements*
- 2.3 SPCO Activity
  - 2.3.1 *Lease Administration*
  - 2.3.2 *Compliance Oversight*
  - 2.3.3 *Summary of Lease Compliance Observations: August 2005*
  - 2.3.4 *Summary of Lease Compliance Observations: June 2006*
  - 2.3.5 *Appraisals*
- 2.4 Upcoming Issues
  - 2.4.1 *Lessee's Activities*
  - 2.4.2 *SPCO Compliance Oversight*
- 2.5 Contact Information



*The Nikiski Alaska Pipeline was built in 1976 to transport refined liquid petroleum products from the Tesoro Kenai Refinery in Nikiski to the Port of Anchorage*

## **2.1 Lease and Right-of-Way Overview**

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### **2.1.1 Nikiski Alaska Corridor**

The Nikiski Alaska Pipeline was built in 1976 to transport refined liquid petroleum products from the Tesoro Kenai Refinery in Nikiski to the Port of Anchorage. The entire pipeline is buried, including the Turnagain Arm crossing. The total length is about 68.9 miles with about 52.8 miles on State land. More pipeline-specific information is provided later in this section.

The ROW Lease Agreement for the Nikiski Pipeline between the State of Alaska and Nikiski Alaska Pipeline Company was issued on January 30, 1976. On September 21, 1984, the lease was amended to alter the lessee name to Tesoro Alaska Pipeline Company (Tesoro). The lease will expire January 29, 2031. The operations ROW extends five feet on either side of the pipeline centerline for a total width of ten feet. Landowners in the ROW include the State of Alaska, Kenai Peninsula Borough, Municipality of Anchorage, the Federal Government, Cook Inlet Regional Corporation, and other private landowners. Tesoro is the ROW lessee for the Nikiski Alaska Pipeline and is also the pipeline operator.

*Environmental concerns:* Much of the pipeline route is within or adjacent to the Captain Cook State Recreation Area and the Kenai National Wildlife Refuge, including the Moose Range. Because spills here would threaten wetlands and wildlife habitat and are predicted to quickly escape into Cook Inlet, this area is designated as environmentally sensitive. Except for one small section of pipeline located west of Captain Cook State Park, the entire pipeline is located in a High Consequence Area as defined by USDOT regulations.

*Populated Areas:* Some segments of the Nikiski Pipeline traverse densely populated areas. The immediate vicinity of the Tesoro Nikiski Refinery is populated though the corridor between the refinery and Anchorage has very low population density. There are scattered houses. The segment of the pipeline in Anchorage, however, is heavily populated. Through the Northern Lights Boulevard corridor, especially, Tesoro estimates that as many as several hundred to several thousand people could be within one-half mile of the pipeline corridor at any given time. The Anchorage Fire Department will be the Incident Commander during the emergency phase of any spill or fire, and Tesoro meets with them annually to develop response strategies. Many of the populated areas of the Nikiski Alaska Pipeline are not on State land, so they are not part of the ROW lease.

*Turnagain Arm Elementary:* The Nikiski Pipeline also passes in front of Turnagain Arm Elementary School on Northern Lights Boulevard. Approximately 100 feet of driveway, parking lot, and grassy area separates the pipeline right-of-way from the school. This area is given the highest possible priority for emergency response in Tesoro's Oil Spill Prevention and Contingency Plan submitted to ADEC. It is also outside of the State ROW lease.

*River Crossings:* The Nikiski Pipeline crosses several rivers, streams, wetland areas, and travels adjacent to several small lakes. Many are fish-bearing. The pipeline crosses

these anadromous waters: Swanson River, Bishop Creek, Daniels Creek, Seven Egg Creek, Miller Creek, Otter Creek, Fish Creek, Chester Creek, and Ship Creek. All but Fish, Chester, and Ship Creek are within the ADL 69354 ROW.

*Recent Spills:* A spill occurred in July 2001 in Captain Cook State Recreation Area when an unknown amount of Jet Fuel A leaked due to external corrosion. An additional spill occurred two months later at the Anchorage airport due to third party damage. Between one and two hundred gallons of gasoline were spilled.

*Lease:* An electronic copy of the Nikiski lease agreement is available for public viewing at the SPCO website: <http://www.jpo.doi.gov/SPCO/SPCO.htm>.

### **2.1.2 Nikiski Alaska Pipeline (ADL 69354)**

The 10.75-inch Nikiski Alaska Pipeline begins at the Kenai pump station at the Tesoro Kenai Refinery. The State-leased ROW begins approximately 4 miles outside of the refinery. The pipeline parallels the Phillips gas line northeasterly approximately 30 miles to Moose Point, then follows the Cook Inlet shoreline another 15 miles to Point Possession. Here the pipeline travels under Turnagain Arm, cased in concrete, and transitions to shore at Point Campbell in Anchorage. It then parallels the bluff to the north along the Tony Knowles Coastal Trail before crossing under the North-South runway of the Ted Stevens Anchorage International Airport. It enters the Northern Lights Boulevard ROW near the intersection with Hood Lake Road. This is the location where the State ROW ends. The SPCO-administered Nikiski Alaska Pipeline ROW lease encompasses approximately 52.8 miles and contains approximately 64 acres.

The pipeline then follows the south side of Northern Lights until Turnagain Street, where it crosses to the north side. The pipeline travels past additional housing for about a block before it reaches the Alaska Railroad. The pipeline stays on the west side of the railroad ROW, crossing over Fish Creek and outlet conduits at Chester and Ship Creeks. After Ship Creek, the Tesoro Pipeline extends north and east before meeting Ocean Dock Road and continuing until the Tesoro Anchorage Terminal.

The pipeline transports four main products: unleaded gasoline, Jet-B turbine fuel, diesel fuel A, and diesel fuel No. 2. Products are transported in "batches" which are not mechanically separated. The Anchorage Pipeline Receiving Station houses a 1,000 barrel transmix tank to store mixtures that result from the interface of more than one product. Most products are delivered directly to customer storage facilities.

The pipeline was built in 1976, and several sections have been replaced or rerouted since original construction. During construction, pipe girth welds were x-rayed and visually inspected. Wall thicknesses vary along the pipeline.

The pipeline design is based on a maximum allowable operating pressure of 1,440 psig. It is designed to provide a maximum flow rate of 48,000 barrels per day. Ordinarily, the pipeline transports between 40,000 and 45,000 barrels per day with five operating days in a typical week. Normal operating pressure is 1,100-1,200 psig leaving the refinery. It drops to 500-600 psig at Point Possession and ends up at around 100 psig at the Port of Anchorage.



*The Nikiski Pipeline crosses many anadromous streams. Miller Creek, frequently crossed by four-wheeler traffic, is on the portion of the ROW inaccessible by road on the Kenai Peninsula.*

The pipeline is cathodically protected through an impressed current system, and it is coated with a factory-applied extrusion of high-density polyethylene. Cathodic test stations are placed along the pipeline length and checked regularly as part of the lessee's Surveillance & Monitoring Program. Tesoro also uses corrosion coupon testing twice per year through a third party contractor. In Tesoro's Integrity Assessment Report, revised July 29<sup>th</sup>, 2004, external corrosion is characterized as the most significant risk to the pipeline. The report describes disbanded weld joint coatings and sporadic cathodic protection problems.

The entire pipeline is piggable, and Tesoro uses smart pigs to check pipeline conditions. Tesoro first ran an ILI tool through the pipeline in 2001 and ran another tool in 2004. In 2001, magnetic flux leakage and geometry tools were used. In 2004, a geometry tool and an ultrasonic tool were used. Tesoro does not use cleaning or maintenance pigs except ahead of ILI tools. Valves enclosed in chain-link fences are placed approximately every 15 miles along the pipeline as well as either side of Turnagain Arm and the Swanson River. There are nine valve stations in total, not all of which are within the State ROW.

The Tesoro Alaska Pipeline Company is a member of the "Locate Center," a free service that allows the public to locate buried pipelines before excavation. Tesoro places advertisements in local newspapers warning the public to call before digging and sends out regular educational mailings.

**Leak Detection:** Tesoro monitors for leaks along the pipeline through an automated system which compares input and output volumes. Pumps can be manually shut down in two minutes if a potential leak is detected. The Tesoro Pipeline typically operates only five days per week. On weekends, the line is pressurized to normal operating pressure and valves at the terminus and Kenai pump station remain closed to maintain pressure. A drop in pressure normally occurs from cooling. An unusual drop could be a sign of a leak and further testing would occur. This weekly shutdown procedure functions as an additional leak detection test.

**Spill Prevention & Response:** Tesoro has contracted their spill prevention and response program to the non-profit co-op Cook Inlet Spill Prevention and Response. Tesoro's Oil Discharge Prevention and Contingency Plan number 016-CP-2019 covering the pipeline system is approved by ADEC through December 5, 2007.

## **2.2 Lessee's Annual Report**

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The SPCO received a four-page *2005 Annual Comprehensive Report on Pipeline Activities and State of the Pipeline System* document from Tesoro Alaska Pipeline Company, lessee for the Nikiski Alaska Pipeline ROW, on March 7, 2006. The report was more than one month late. The State Pipeline Coordinator has required that Tesoro submit an annual comprehensive report by January 31<sup>st</sup> for the preceding year. The seven requirements for annual reporting are listed in the Introduction Section.

### **2.2.1 SPCO Review**

On March 29, 2006, the State Pipeline Coordinator sent Tesoro a letter stating that the items Tesoro selected to present in their annual report

"cover a portion of the required information, but not all. Many of the items have not been provided or have not been provided in enough detail to allow a clear understanding of the accomplishments you have made for the year. Equivalent reports provided by other lessees consisted of several hundred pages for pipelines less than half the length of yours and with less complicated land ownership and operational parameters. Report volume is not the measure of an adequate report; however a more thorough and complete discussion of the required items is expected."

The State Pipeline Coordinator required the lessee to address the minimum requirements for annual reporting before the report would be accepted. He requested that the lessee provide a more detailed report no later than July 1, 2006. Tesoro's response was received on July 17, late in relation to the July 1 deadline. The follow-up information provided is currently under review.

### 2.2.2 Lessee's Activities

Though the 2005 Tesoro report contains little information about pipeline activities for the year, some information is presented. The report discusses routine, scheduled tasks, but often does not state whether tasks were actually completed in 2005, or how many times. For example, Tesoro reported that they will not operate the pipeline above the maximum design pressure of 1,440 psig, but provided no information about whether that pressure was exceeded in 2005. Below are some activities the lessee reports for 2005:

*Pipeline Operations:* During 2005, the combined throughput of all products transported was approximately 11.5 million barrels (11,512,176 barrels).

*Cathodic Protection:* The Nikiski Alaska Pipeline is protected by an impressed current cathodic protection system. Tesoro uses a third party contractor for inspection. In 2005, Tesoro upgraded some portions of the system, including a new rectifier and ground bed at Point Campbell, additional coupon test stations, and pulse generators for the impressed current systems at Captain Cook Park and Point Possession.



*This photo is of a remotely-operated valve on the Nikiski Alaska Pipeline near Point Possession. Solar panels and propane provide energy for the valve and cathodic protection system.*

*Integrity Management:* An in-line inspection was performed in January 2004. Tesoro reports that all anomalies were repaired that year, except for four anomalies on the sub-sea portion of the line that were repaired in June 2005.

*Security:* Tesoro reported that it has a Security Plan in place to deal with security issues that may arise, but did not state whether any such issues arose in 2005.

*Public Awareness:* In 2005, Tesoro reports that "no damage was done to the pipeline due to conflicts with individuals performing construction or excavation work in the vicinity of the pipeline." In 2006, Tesoro plans to mail brochures to emergency officials and all residences within 660 feet of the pipeline that will explain how to identify and react to a pipeline emergency.

*Pipeline Routing:* In March 2005, Tesoro acquired a new 2,834-foot segment of pipeline from Anchorage Fueling and Service Company on airport property. They also rerouted approximately 4000 feet of pipeline near Northern Lights Blvd. in Anchorage.

*Discharges:* Tesoro reports that there were no discharges from the Tesoro Alaska Pipeline or its facilities onto the State ROW lease ADL 69354 in 2005.

### **2.2.3 Lessee's Surveillance & Monitoring**

*Cathodic Protection Survey:* The 2005 survey was completed in August and September 2005. "The survey consisted of field testing, minor test station repairs and visual examinations...test results indicate that the existing rectifier systems are providing adequate protection to the facilities."

*Overpressure Safety Devices:* No deficiencies noted during inspection and testing.

*Underwater Survey:* The sub-sea pipe crossing Turnagain Arm is inspected every five years. Tesoro last hired a third-party contractor to perform this inspection in 2002, when no unacceptable free-spans of pipe were noted. A survey was completed in 2006, and the results will be reported in the lessee's 2006 annual report.

*ROW Inspections:* Tesoro performed ROW inspections in accordance with USDOT guidelines. Some minor deficiencies were noted, including a cracked valve at MLV 4, which was later repaired.

### **2.2.4 Recent Realignment and Replacements**

In early summer 2005, a 1600-foot section of pipeline was replaced at Point Possession. In-line inspection identified that the segment needed significant repair. A surveillant from the JPO Fairbanks Office observed part of the work taking place. The State ROW was modified for the realignment. The new pipe is coated and cased in meshed cement for ballast and protection. The lessee completed testing the replacement on June 18<sup>th</sup> and re-commissioned the line on June 20<sup>th</sup>, 2005.

Other recent realignments and replacements include the following:

- The lessee rerouted a portion of the pipeline along Northern Lights Boulevard, North of Turnagain Bog. A 4265-foot section of pipe was cleaned, capped off, and left in place.

- An additional realignment took place in April 2004 at Ship Creek near the Port of Anchorage. The bridge on which the original pipeline was mounted was removed. About 200 feet of pipe was purged, charged with a nitrogen blanket, and abandoned in place.
- In April 2004, the SPCO approved a project to replace a two- to five-foot section of pipe on the east side of Postmark Road near the Anchorage Airport. The section had a sleeve welded on it in 1985.



*This sign, a piece of which has fallen off, marks the pipeline's transition to sub-sea at Point Possession on the Kenai Peninsula. The propane tanks to the right are part of the impressed current cathodic protection system for the sub-sea line. The site was accessed by four-wheeler during June 2006 SPCO surveillance.*

## **2.3 SPCO Activity**

### **2.3.1 Lease Administration**

The Lease Administration team does not have anything significant to report for the Nikiski Alaska Pipeline in FY06.

### 2.3.2 Compliance Oversight

In June 2005, a JPO surveillant from the Fairbanks office observed pipe replacement work for a segment of the sub-sea pipeline and took pictures of work in progress.

On August 30<sup>th</sup> and 31<sup>st</sup>, 2005, the compliance oversight team lead conducted field surveillance of the Tesoro ROW. The purpose of the surveillance was to get a general overview of the ROW and pipeline system. The surveillant also discussed recent pigging efforts and anomaly identification and repair. The surveillant flew the ROW from the refinery to Point Possession. He flew about 200 feet above ground level and took digital images of the ROW. He reported that the ROW appeared to be in fair condition, though somewhat damaged by all-terrain vehicle traffic. The SPCO surveillant reported that damage was most pronounced in wetlands and stream crossings.

Additional surveillance occurred on June 19 and 20, 2006. The lease compliance oversight team flew to Kenai and spent a day at the Tesoro refinery offices reviewing records, maps, and discussing the lease compliance oversight program. They visited road-accessible portions of the ROW, including several valves and stream crossings. On the 20<sup>th</sup>, they accessed the pipeline ROW using off-road vehicles. They traveled almost the entire length of the ROW that is inaccessible by road to see every valve and stream crossing on the Kenai Peninsula side of the pipeline. Again the team noted that the ROW lands were somewhat damaged by off-road vehicle traffic, something that Tesoro has little control over. Surveillance reports are not yet completed for this trip but will be finalized in FY07.

### 2.3.3 Summary of Lease Compliance Observations: August 2005

<u>Lease Section</u>	<u>Description</u>	<u>Observation</u>	<u>Report #</u>
6	State access to property & records; maintenance of pipeline in good repair	Satisfactory	ANC-05-S-182
15(a)	Construction and design plans for review and approval	Satisfactory	ANC-05-S-183
<u>Stipulation</u>	<u>Description</u>	<u>Observation</u>	<u>Report #</u>
1.3.1	Lessee to furnish SPCO requested data	Satisfactory	ANC-05-S-184
1.15.1 & .3	Surveillance & maintenance (monitoring), retention of records	Satisfactory	ANC-05-S-185
2.1.4.2	Waste management	Unsatisfactory	ANC-05-S-186
3.2.1.1	49 CFR standards	Satisfactory	ANC-05-S-187
3.5.1	Design for meteorological, hydrologic, and hydraulic conditions	Satisfactory	ANC-05-S-188
3.7.1	Corrosion program, 49 CFR, pipe coating	Satisfactory	ANC-05-S-189

**2.3.4 Summary of Lease Compliance Observations: June 2006**

<u>Lease Section</u>	<u>Description</u>	<u>Observation</u>	<u>Report #</u>
6	State access to property and records	Pending	ANC-06-S-116

<u>Stipulation</u>	<u>Description</u>	<u>Observation</u>	<u>Report #</u>
1.11	Protection of improvements	Pending	ANC-06-S-117
1.12	Public access to access roads	Pending	ANC-06-S-118
2.3.2.4	Removal of clearing debris	Pending	ANC-06-S-119
3.6.1	Minimize environmental changes	Pending	ANC-06-S-120

**2.3.5 Appraisals**

According to AS 38.35, ROW lessees must pay fair market value to lease State land for pipeline activities. The original appraisal period for the Nikiski Alaska ROW was established for 25 years beginning in fall 1978. Subsequently, a new appraisal is due every ten years per the lease agreement. The most recent appraisal of the Tesoro ROW, performed by MacSwain Associates, was approved by ADNR on July 28, 2004.

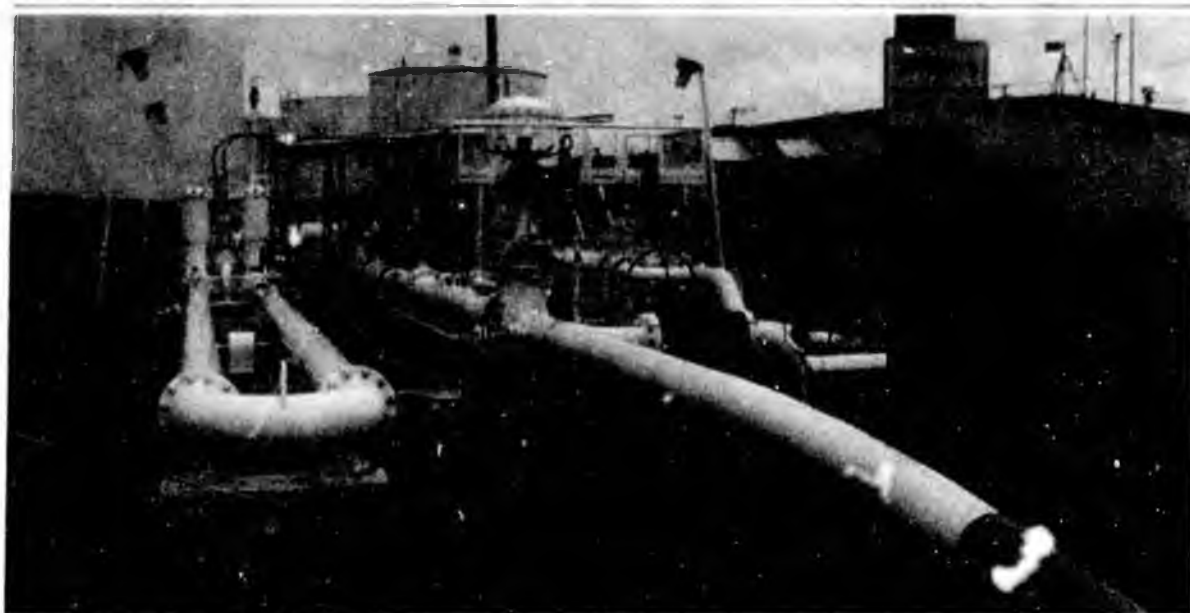
This appraisal covers the ROW described by the legal description in ADL 69354, which encompasses 64.021 acres and 52.8 miles of pipeline (the total pipeline length is longer). This ROW does not include portions of pipeline within 4.5 miles of the refinery or beyond the airport in Anchorage because these areas have not been identified as containing any State-owned land. The acreage allocations and annual rental fees for ADL 69354 follow:

<u>ADL</u>	<u>State Acres</u>	<u>Estimated Market Rent</u>
69354	64.021	\$15,207

**2.4 Upcoming Issues****2.4.1 Lessee's Activities**

As of July 1, 2006, Tesoro is in the process of installing a new rectifier and ground bed near Mainline Valve 9 in Anchorage. In fall 2006, Tesoro will mail educational brochures to all residences within 660 feet of the pipeline. These mailings occur every two years. Emergency officials and excavators receive mailings annually.

*Inspections:* In 2007, the next side-scan survey of the Turnagain Arm sub-sea pipe is scheduled. Tesoro has scheduled their next ILI tool run for 2009 but has indicated they may use an ILI tool as early as 2007 due to scheduling concerns.



*The Nikiski Pipeline terminates at the Port of Anchorage at Tesoro's facilities.*

#### **2.4.2 SPCO Compliance Oversight**

In FY07, the lease compliance oversight team plans to finalize reports from the June 2006 surveillance and complete any necessary follow-up. Follow-up to the lessee's 2005 annual report is currently under review. The lessee's 2006 annual report, due January 31, 2007, will also be reviewed. Additional field surveillance may be conducted in FY07.

### **2.5 Contact Information**

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The Nikiski Alaska Pipeline ROW lease requires the Tesoro Alaska Pipeline Company to designate in writing a registered agent and field representative. The lease and AS 38.35 require the registered agent to be a resident of Alaska. It does not appear that the lessee's registered agent meets this requirement. The SPCO, in a letter dated July 7, 2006, has asked the lessee to provide updated contact information by August 15, 2006.

*Registered Agent*

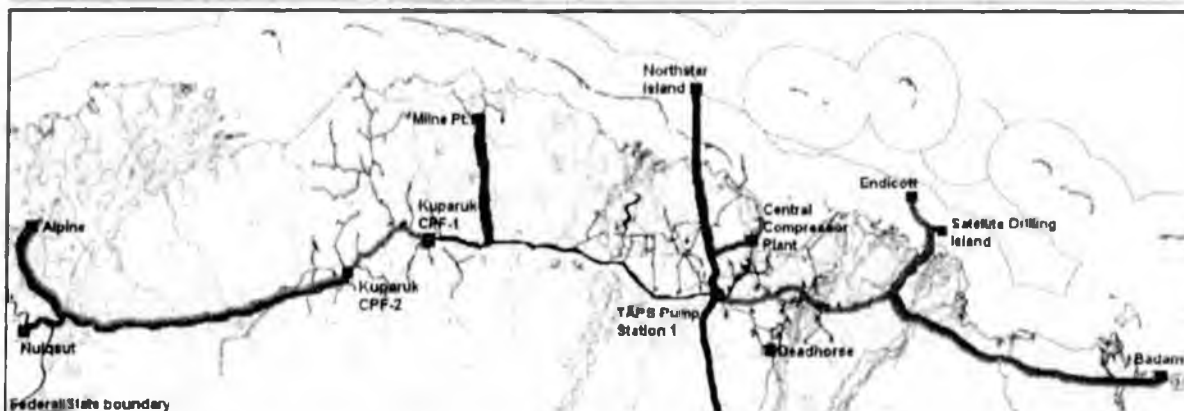
Jay R. Fraley, Manager, Right of Way & Land  
Tesoro Alaska Pipeline Company  
1225 17<sup>th</sup> Street, Suite 1800  
Denver, CO 80202

*Field Representative*

Shawn Brown, Manager, Alaska Pipelines & Terminals  
Tesoro Alaska Pipeline Company  
P.O. Box 3369  
Kenai, AK 99611

## North Slope Pipelines

3. <u>Alpine Pipelines</u>	49
4. <u>Kuparuk &amp; Oliktok Pipelines</u>	61
5. <u>Badami Pipelines</u>	75
6. <u>Endicott Pipeline</u>	89
7. <u>Northstar Pipelines</u>	99
8. <u>Milne Point Pipelines</u>	109
9. <u>Nuiqsut Natural Gas Pipeline</u>	121



### North Slope Pipelines:

- |                             |                                 |
|-----------------------------|---------------------------------|
| ■ Alpine Oil Pipeline       | ■ Kuparuk Pipeline Extension    |
| ■ Alpine Diesel Pipeline    | ■ Milne Point Oil Pipeline      |
| ■ Alpine Utility Pipeline   | ■ Milne Point Products Pipeline |
| ■ Badami Sales Oil Pipeline | ■ Northstar Oil Pipeline        |
| ■ Badami Utility Pipeline   | ■ Northstar Gas Pipeline        |
| ■ Endicott Pipeline         | ■ Oliktok Pipeline              |
| ■ Kuparuk Oil Pipeline      | ■ Trans-Alaska Pipeline System  |

## NORTH SLOPE PIPELINES

### **3 Alpine Pipelines: Oil, Diesel, and Utility**

ADL # 415701, 415932, and 415857

#### o 3.1 Lease and Right-of-Way Overview

- 3.1.1 *Alpine Corridor*
- 3.1.2 *Alpine Oil Pipeline (ADL 415701)*
- 3.1.3 *Alpine Diesel Pipeline (ADL 415932)*
- 3.1.4 *Alpine Utility Pipeline (ADL 415857)*

#### o 3.2 Lessee's Annual Report

- 3.2.1 *SPCO Review*
- 3.2.2 *Lessee's Activities*
- 3.2.3 *Lessee's Surveillance & Monitoring*

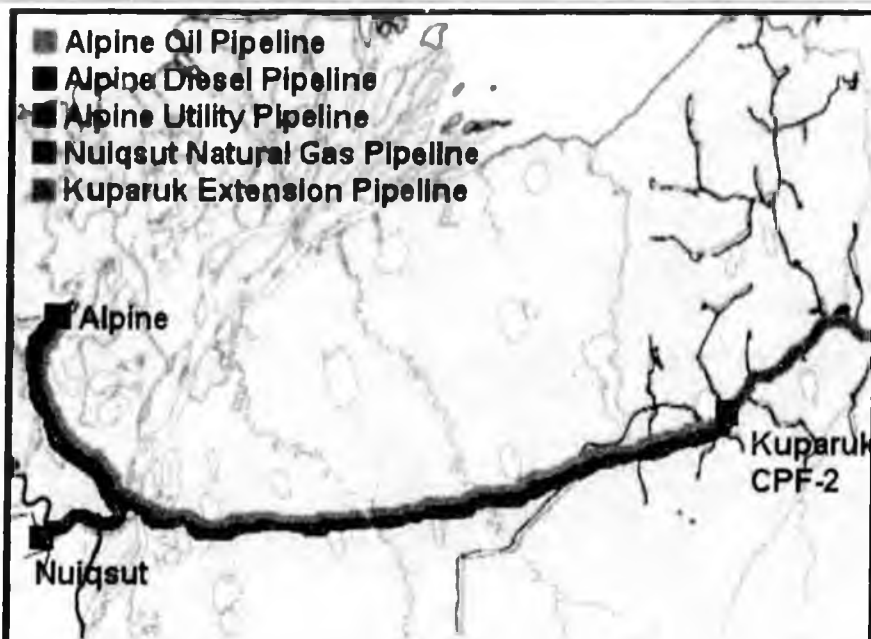
#### o 3.3 SPCO Activity

- 3.3.1 *Lease Administration*
- 3.3.2 *Compliance Oversight*
- 3.3.3 *Summary of Lease Compliance Observations: June 2005*
- 3.3.4 *Release of Construction Right-of-Way*
- 3.3.5 *Appraisals*

#### o 3.4 Upcoming Issues

- 3.4.1 *Lessee's Activities*
- 3.4.2 *SPCO Compliance Oversight*

#### o 3.5 Contact Information



*The Alpine Pipelines cross the Colville Delta, connecting the Alpine Development on the western North Slope to infrastructure in the Kuparuk River Unit.*

### **3.1 Lease and Right-of-Way Overview**

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#### **3.1.1 Alpine Corridor**

On the west side of North Slope oil development, in the Colville River Unit, the Alpine pipelines connect the Alpine Development to the Kuparuk Pipeline Extension at Kuparuk Central Processing Facility 2 (CPF-2). Three aboveground pipelines share the same set of horizontal and vertical supports except at the Colville River crossing, where they are buried beneath the riverbed using horizontal directional drilling. Additionally, the VSMs support a fiber optic connection for Alpine, and the Nuiqsut Natural Gas Pipeline shares the VSMs from the Alpine development to the west end of HDD at the Colville River. More pipeline-specific information is provided later in this section.

Though the Alpine pipelines share VSMs, each has a separate ROW lease agreement with the State. The Alpine Oil and Diesel Pipeline lease agreements between ConocoPhillips Company and ADNOR were issued December 15, 1998 and expire December 14, 2018. Unlike other common carrier pipelines issued ROW leases under AS 38.35, the Alpine Utility Pipeline was granted a utility ROW under AS 38.05, the Alaska Land Act. The grant from the State of Alaska to ConocoPhillips Company will expire January 5, 2019.

ConocoPhillips Company is the ROW lessee, though other affiliated companies maintain and manage the pipelines. ConocoPhillips Alaska Inc. (CPAI) is the primary contractor for operation and maintenance of the Alpine pipelines. ConocoPhillips Alaska Pipelines (CPAP) is the right-of-way manager. Alpine Transportation Company, a partnership of Alpine Pipeline Company, Anadarko Alaska Pipeline Systems, Arctic Slope Regional Corporation, and Kuukpik Transportation Company, is the owner of the Alpine Oil Pipeline. CPAI owns the Alpine Diesel and Utility Pipelines.



*Aerial view of the Alpine Development on the Colville River delta.*

The Alpine pipelines are 34.2 miles long, and traverse land owned by Kuukpik Corporation and the State of Alaska. The Kuukpik land is from VSM 243 to VSM 326 and VSM 335 to 1212 (except the Colville River, where the State owns land between the two ordinary high water marks). The State land includes 148.66 acres in the oil ROW, 148.51 acres in the diesel ROW, and 148.65 acres of land in the utility ROW.

*Environmental concerns:* The Alpine pipelines are constructed on horizontal and vertical supports a minimum of five feet above the tundra to prevent permafrost degradation and permit wildlife passage. The Alpine pipeline system is "roadless," only accessible by ice road in the winter. While this reduces the overall impact to tundra, it presents difficulties for pipeline surveillance, monitoring, and maintenance. An additional sensitivity for the Alpine pipelines is wind-induced vibration, which can weaken pipelines and supports. This is mitigated through vibration dampeners. Reflective tape is installed on VSMs to help warn of their location to prevent accidental collisions (e.g. subsistence snowmachine traffic from nearby Nuiqsut).

*River Crossings:* A significant environmental concern in the Alpine ROW is the Colville River crossing. To prevent damage to the river, the Alpine pipelines are installed inside steel casing that was bored underneath the riverbed, 85 feet below grade, using HDD. The Colville River crossing is monitored for geothermal stability in addition to erosion and other concerns along all river crossings annually. Above-grade crossings include the Kachemach and Miluveach Rivers and Kalubik Creek.

*Lease:* Electronic copies of the Alpine lease agreements and approved amendments are available at the SPCO website: <http://www.jpo.doi.gov/SPCO/SPCO.htm>.

### **3.1.2 Alpine Oil Pipeline (ADL 415701)**

The 14-inch Alpine Oil Pipeline has been transporting crude oil from the Alpine Development to the Kuparuk Extension Oil Pipeline since November 15, 2000. The pipeline was constructed for a maximum operating pressure of 2,064 psig with a wall thickness of 0.312 inches (0.438 inches at the Colville River crossing). It is designed to carry 100,000-140,000 barrels of oil per day at temperatures up to 180°F. The entire oil pipeline is piggable, and CPAI employs smart pigs to detect corrosion and pipeline integrity problems. The Alpine Oil Pipeline was last pigged with both a geometry and magnetic flux leakage in-line inspection tool in 2005. The operator cleans the pipeline monthly with a utility pig. About 20 gallons per day of drag reducing agent is added to the oil in the pipeline to reduce turbulence. No corrosion inhibiting chemicals are used.

### **3.1.3 Alpine Diesel Pipeline (ADL 415932)**

The Alpine Diesel Pipeline is 2.375 inches in diameter with a 0.156 inch wall thickness. Its maximum operating pressure is 1,366 psig, and it's designed to transport 15 gallons per minute, up to 100° F. On July 2, 2003, the SPCO approved transportation of all products, as defined in AS 38.35.230(8), through the Alpine Diesel Pipeline. In 2005, the Diesel Pipeline transported arctic heating fuel and LVT 200 Base oil. The Alpine Diesel Pipeline runs from Kuparuk CPF-2 to the Alpine Development. It

is not insulated or coated except at the Colville River crossing, where it is fusion-bonded epoxy coated. Because it is a low-pressure hazardous liquids line, it is only regulated by the USDOT at the Colville River crossing. The diesel pipeline is too small in diameter to allow passage of a smart pig, but utility pigs are used quarterly for cleaning.



*Aerial photo of a vertical loop; a design feature limiting the total possible volume of an oil spill.*

#### **3.1.4 Alpine Utility Pipeline (ADL 415857)**

The 12.75-inch Alpine Utility Pipeline originally transported natural gas to the Alaine Development in 2000, but was transitioned to transport treated seawater in 2001. The maximum operating pressure is 2,160 psig, and the wall thickness is 0.330 inches. The seawater line is wrapped in 3-inch thick insulation and steel jacketing. It is designed to transport 70,000 barrels per day at temperatures up to 150°F. To prevent corrosion due to biological activity, the biocide glutaraldehyde is added to the flow.

The entire utility pipeline is piggable, and CPAI employs smart pigs to detect corrosion and pipeline integrity problems. The Alpine Utility Pipeline was last pigged with a magnetic flux leakage ILI tool in 2005. A utility pig is run through the pipeline approximately every three weeks for cleaning.

### **3.2 Lessee's Annual Report**

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#### **3.2.1 SPCO Review**

CPAI, operator of the Alpine pipelines, submitted one *2005 Annual Comprehensive Report on Pipeline Activities* to the SPCO for each Alpine lease and grant on time in

January 2006. CPAI's three reports provide detailed information on pipeline activities, and document lease compliance as required. On March 28, 2006, the SPCO issued a letter to CPAI commending the 2005 reports as outstanding, and confirming that they met all seven requirements for annual reporting. The seven requirements are listed in the Introduction Section.

### **3.2.2 Lessee's Activities**

*Oil Line Operations:* In calendar year 2005, the Alpine Oil Pipeline was available for operation 99.7% of the time. Two slowdowns were planned to correspond to TAPS shutdowns and three unplanned shutdowns occurred because of accidental valve closures. All three accidental closures were investigated and corrective/preventive actions were reported for each. CPAI also reports that none caused pipeline overpressure or otherwise impacted pipeline integrity. In 2005, the oil pipeline transported 43,819,365 barrels of sales quality crude to the Kuparuk pipeline system.

*Utility Line Operations:* The Alpine Utility Pipeline was available for service 99.6% of 2005. CPAI reports that pigging and "unscheduled minor pump maintenance" are the primary activities which affected pipeline operations. In 2005, the Utility Pipeline transported 45,905,621 barrels of treated seawater to the Alpine Development.

*Diesel Line Operations:* The Alpine Diesel Pipeline, which began service on May 20, 1999, was 100% available for service in 2005. The only operational change in 2005 is the addition of pipeline pressurization tests for product transfers over 24 hours, or prior to transfers if the line was in static state below 300 psi. This satisfies requirements identified during an evaluation of the Alpine Diesel Pipeline leak detection system. In 2005, the Diesel Pipeline transported 4,115,157 gallons of arctic heating fuel and 1,420 gallons of "LVT 200 Base Oil" to the Alpine Development.

*Oil Leak:* on December 18, 2005, the CPAI inspection crew noticed a small amount of crude oil on the underside of an Alpine Oil Pipeline weld pack between VSM 1834 and 1835. CPAI reported the spill (which never reached the ground), estimated at about a tablespoon, to Alaska State Troopers and the ADEC (spill #05399935201). On January 5, 2006, CPAI repaired the weld with a sleeve and confirmed its fitness through hydrostatic testing. CPAI's Corrosion Department conducted a root cause analysis. "Weld failure" is listed as the cause of the discharge on the final ADEC situation report.

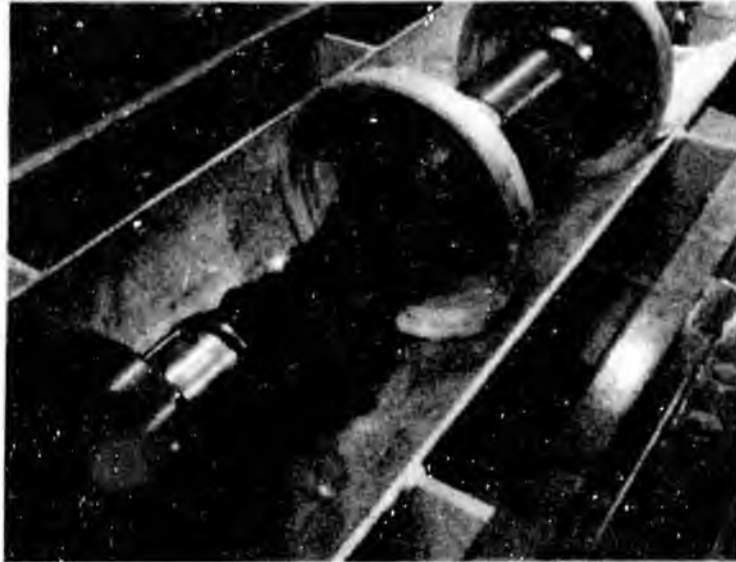
*Other Incidents:* CPAI reports that no other incidents or events occurred along the Oil, Utility, or Diesel pipelines in 2005. No OSHA Reportable safety incidents of lost time or medical treatment occurred for Alpine pipeline personnel.

*Training/Preparedness:* CPAI reports that their spill response team conducted two drills in 2005 at the Colville River crossing HDD site and delivered over 50 training classes for the incident management team.

### **3.2.3 Lessee's Surveillance & Monitoring**

*Overview:* Each Alpine lease/grant Stipulation 1.6 requires the lessee to follow an SPCO-approved surveillance & monitoring program. This program describes how the

lessee ensures they are complying with lease provisions. The Alpine Surveillance Program consists of routine aerial and ground-based surveillance. The Monitoring Program consists of routine and corrective maintenance and inspection tasks, as well as a variety of pipeline, river crossing, and wildlife monitoring. For more detailed information on what is monitored along the Alpine Pipelines, and the frequency for monitoring, see the current *Surveillance & Monitoring Program* for each pipeline.



*This smart pig was used in June 2005 to detect pipeline conditions in the Alpine Oil Pipeline. The lease compliance oversight team witnessed retrieval of the pig at Kuparuk.*

**2005 Surveillance & Monitoring Program Revision:** On April 12, 2005, CPAI submitted a proposed revision to the surveillance & monitoring plans for the Alpine pipelines. In June, SPCO and CPAI representatives reviewed the proposed plan, and CPAI submitted a new revision proposal on July 1, 2005, taking the review into account. The new program, approved by the State Pipeline Coordinator on July 29, 2005, reflects organizational changes at CPAI, clarifications on what is a reportable condition, and regulatory and reference updates. The new plan also clarifies weekly and annual flooding and erosion detection methods and frequencies. CPAI has added *conditional* as a new classification for surveillance frequency, so certain events can trigger surveillance. Some reportable conditions were removed from the Alpine Diesel Program when it was determined they did not apply to the line.

**Aerial Surveillance:** The Alpine Oil Discharge Prevention and Contingency Plan, 2.5 Discharge Detection [18 AAC 75.425(e)2(E)] requires weekly aerial surveillance (weather permitting). Reportable conditions include leaks & spills, snow accumulation, pipe movement off VSMs, unauthorized ROW activities, fires and fire hazards, and significant bank erosion and flooding. In 2005, there were 155 surveillance flights, well above the minimum required. No reportable conditions were uncovered.

**Breakup Monitoring (River Crossings):** CPAI monitors scour and erosion at pipeline crossing sites qualitatively. In 2005, no significant scour or erosion was discovered.

However, at the East Bank of the Colville River HDD site, natural erosion has continued. Despite exposed insulation and a broken thermistor casing, CPAI says the safe operation of the pipeline has not been affected.

*Colville River HDD Crossing:* CPAI is working to monitor stability at the Colville River HDD site. The geotechnical and geothermal analysis uses temperature data from thermistors to ensure the soil remains stable. The 2005 analysis confirms soil stability. Additional monitoring occurred at the site of the HDD gravel pad rehabilitation. In March 2005, CPAI issued *Part III: Biotechnical Stabilization of HDD Gravel Pads from the 2004 Land Rehabilitation Program*, concluding their HDD pad rehabilitation. They plan to perform maintenance if the pad is disturbed. CPAI continues to monitor an ice wedge-related erosion feature on the East Bank of the Colville River, and does not believe the erosion to be a threat to the pipelines at this time, but they are watching it closely. During 2005, CPAI repaired fiberglass casing damage on one thermistor.

*Mammal Surveys:* CPAI conducts annual caribou research as mandated in the Kuparuk River Use Agreement. The annual reports for each Alpine lease/grant contain the executive summary for 2004's mammal surveys in the Greater Kuparuk Area. The 2005 report was still under review at the time the lessee submitted their annual report. The lessee has not noted any problems with wildlife passage across the ROW, or other impacts on mammals. Lease stipulations address protection of fish and wildlife.

*Spectacled Eiders:* In 2004, CPAI contracted with ABR, Inc. to survey Spectacled Eider abundance and distribution, including nests, along the Alpine corridor. Spectacled Eiders are listed as threatened under the Endangered Species Act. No Spectacled Eiders were sighted along the pipeline, though some were spotted in the vicinity of the pipelines, near CPF-2. The closest bird was a male approximately 550 meters south of the pipelines. CPAI is currently working to map Spectacled Eider density.

*HSM/VSM Repairs:* CPAI repaired two subsided VSMs, 1938 and 1939, and initiated repairs on a third, 2854. They identified a possible recurring subsidence problem with VSM 2111, which had been re-leveled in 2004, and plan to monitor it further. The following VSMs had sloping crossbeams and CPAI repaired, replaced or realigned intermediate supports: 2335A, 2508, 2699, 2782, 2847, and 2905. CPAI also installed or replaced reflective tape on about a dozen VSMs. Some damage to VSM U-Bolts was noted on 1538, 1577, and 2905, and repairs are scheduled for 2006. CPAI tightened loose bolts on HSM 936 and scheduled tightening of loose bolts on HSM 144 for 2006.

*Deviation from Design:* At VSMs 1456, 1511, 1557, and 1760, the Diesel Pipeline is touching the Utility Pipeline. The locations will be evaluated in 2006.

*Survey Monuments:* CPAI noted several problems with survey monuments, including missing labels. All are scheduled for follow up.

*Coupons:* All coupons pulled for repair on the diesel line were ranked "A" (minimal corrosion). One "C"-ranked coupon was found on a diesel pipeline vertical loop elbow.

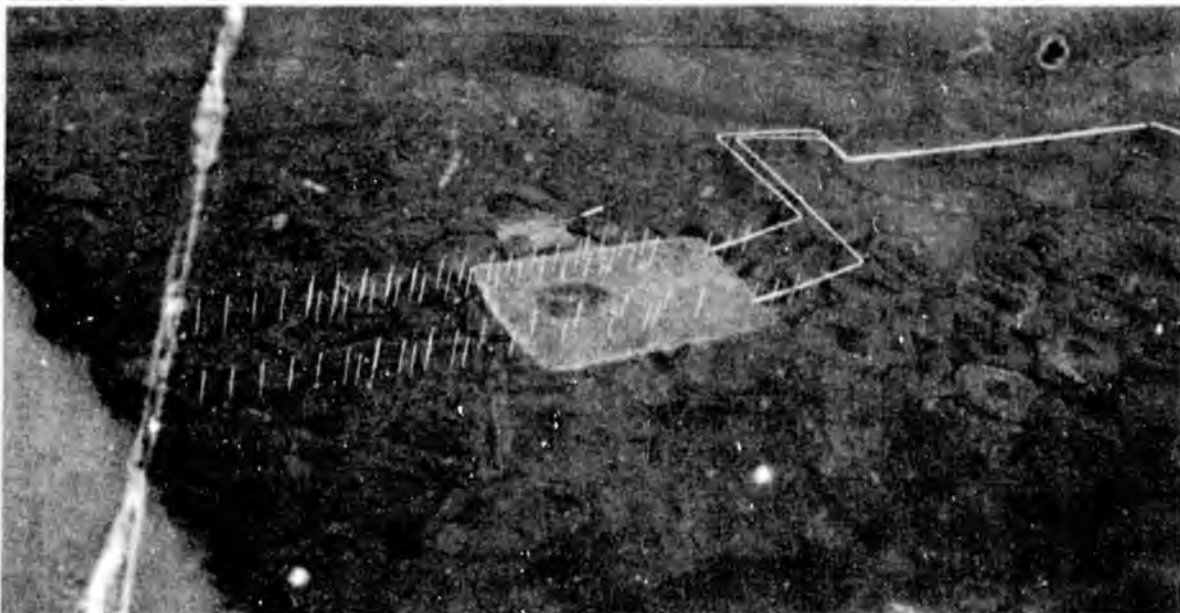
*USDOT Compliance:* Between February 28 and March 7, 2005, a USDOT representative performed standard inspections of the North Slope pipelines, including USDOT-regulated portions of the Alpine pipelines.

### 3.3 SPCO Activity

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#### 3.3.1 Lease Administration

The lease administration team began formally processing CPAI's request for a release of interest to reduce the ROW size in fall 2005. The release reduced the amount of acreage in the CPAI leases and grant by reducing the width of the pipeline ROWs essentially from a 250 foot wide construction corridor to a 50 foot wide operations corridor. The Release of Interest was signed by the ADNR Commissioner on February 9, 2006 and subsequently recorded. For more information, see 3.3.4.



*Aerial photo of the transition between below-ground pipe (in steel casing) and above-ground pipe at the East Bank of the Colville River HDD site.*

#### 3.3.2 Compliance Oversight

The SPCO compliance oversight team conducted surveillance of the Alpine ROWs in June 2005. The primary scope of this surveillance was to evaluate lease stipulations 1.6 (Surveillance & Monitoring) and 3.2 (Pipeline Corrosion). The team also looked at the ROWs in preparation for the requested reduction in ROW width.

To assess the lessee's corrosion monitoring, SPCO personnel requested to watch a smart pig launch or retrieval, also known as an ILI tool run. Due to logistical constraints, only a retrieval was observed. Both the Utility and Oil pipelines were pigged by BJ Pipeline Inspection Services in June 2005. The operator used an ILI package of both a geometry tool and a magnetic flux leakage detection tool. The geometry tool looks for dents and buckles, and the magnetic flux leakage tool observes metal loss. The surveillant described the pigging as a "fairly well executed operation." He also reviewed

the executive summaries of reports sent by the pig vendor when they were completed. Another form of corrosion monitoring is the use of coupons, small pieces of metal representative of the pipe placed in the flow of liquids that are removed and inspected regularly to assess internal corrosion conditions. CPAI uses corrosion coupons in the Alpine Diesel Pipeline. While on site at Alpine, SPCO staff visited the lab where CPAI examines coupons from the Alpine pipelines.

External corrosion is assessed by visual inspection, tangential radiography, ultrasonic testing, and other types of inspection. The compliance oversight team reviewed Alpine's external corrosion monitoring program. In HDD areas under the Colville River, a cathodic protection system is installed. This provides an electric current to prevent differential soil-to-pipe potential, preventing external corrosion.

SPCO staff also reviewed Alpine's leak detection system, which employs several methods including weekly visual inspections from the air, metered volume balancing (ensuring that what goes in the pipeline comes out the other end), and Pressure Point Analysis by Ed Farmer Associates, a software system individually calibrated for each pipeline to check for abnormal pressure flow patterns. During the aerial visual inspections, a forward looking infrared radar (FLIR) camera is mounted underneath the aircraft to detect small temperature differences, showing potential leaks or areas of insulation saturated with water (which can lead to external corrosion). The compliance oversight team viewed a video clip of FLIR surveillance of the HDD site and discussed FLIR instrumentation with the primary equipment operator.

The lease compliance oversight team also reviewed numerous documents provided by the lessee, especially those related to corrosion detection and control. These are listed in the Surveillance Field Notes attached to surveillance report #ANC-05-S-108.



*VSMs for the Alpine pipelines are marked with reflector tape for public safety.*

**3.3.3 Summary of lease compliance observations: June 2005**

	<u>Oil</u>	<u>Diesel</u>	<u>Utility</u>	<u>Observation</u>
<b>Section</b>	1(d)			Satisfactory
	6(a)	6(a)	6(a)	Satisfactory
	8(d)	8(a)(2)	8(a)	Satisfactory
	14(a)	14(a)	14(a)	Satisfactory
	16(a)	16(a)	16(a)	Satisfactory
	20	20	20	Satisfactory
<b>Stipulation</b>	1.2.1	1.2.1	1.2.1	Satisfactory
	1.4.1	1.4.1	1.4.1	Satisfactory
	1.5.1	1.5.1	1.5.1	Satisfactory
	1.6.1(3)(4)	1.6.1(3)(4)	1.6.1(3)(4)	Satisfactory
	1.7.2	1.7.2	1.7.2	Satisfactory
	1.8.1	1.8.1	1.8.1	Satisfactory
	1.12.1	1.12.1	1.12.1	Satisfactory
	1.13.1	1.13.1	1.13.1	Unsatisfactory (minor)
	1.14.1(1)-(4)	1.14.1(1)-(4)	1.14.1(1)-(4)	Satisfactory
	2.8.1	2.8.1	2.8.1	Satisfactory
	2.10.2			Satisfactory
	2.14.1			Satisfactory
	3.1.1.1			Satisfactory
	3.2.1	3.2.1	3.2.1	Satisfactory

**3.3.4 Release of Construction Right-of-Way**

Under Section 29 of the Alpine leases/grant, before issuing a release of interests reducing the pipeline ROW from construction to operations width, the SPCO made a recommendation to the ADNR Commissioner outlining whether the State lands were in adequate condition, and the lessee had complied lease/grant terms. The lease administration team, in conjunction with the compliance oversight team, reviewed the associated case files to ensure that no spills or environmental damage occurred on State lands to be released. The compliance oversight team conducted field surveillance to confirm land use and conditions. The SPCO recommended the ADNR commissioner grant the reduction in widths. The release of interest memo, available in the Alpine case file, documents the results of SPCO surveillances that determined the Alpine lessee to be in compliance with lease/grant stipulations, regulations, and statutes. The Release of Interest document was entered February 9, 2006, signed by Karen Kennedy (registered agent for ConocoPhillips Company), and finalized upon signature of the ADNR Commissioner on the same day.

*Surveys:* On 12/16/2004, the SPCO approved a Record of Survey identifying the operations and maintenance ROWs, completing the first phase of the release process. There are three separate Alpine ROW corridors. Each ROW is centered on each

pipeline, and so they are slightly staggered. The Record of Survey (EPF 20020040) was approved by ADNR on December 16, 2004 and reflects the Alpine operations corridors.

**Seawater Spill Site:** The compliance oversight team investigated the site of a 1,492-gallon seawater spill that occurred during pre-service hydrostatic testing of the oil line June 22, 2000 near VSM 1343. The failed portion of the pipeline was repaired before service. A 12/31/2001 letter from the SPCO approved discontinuing monitoring of the spill site after a 2<sup>nd</sup> environmental assessment was submitted. The area of the seawater spill appears to have recovered at a satisfactory rate and the 2005 surveillance team did not note any abnormal conditions.

**Storage of Lessee's Equipment in ROW:** According to the leases and grant, storage of unused equipment is not allowed within the ROW unless approved by the State Pipeline Coordinator. CPAP (lessee) requested that CPAI (operator) be allowed to store equipment in the Alpine ROW in April 2004, but later rescinded the request after determining that storage wouldn't occur within the ROW. However, in June 2005, the compliance oversight team observed equipment storage within the ROW. It was neatly ordered, well-organized, inventoried, and documented annually as a preventive maintenance work order. It did not, however, have the proper SPCO approval since the original request had been withdrawn. Discussions, correspondence, and a meeting between the operator, ADNR's Division of Oil & Gas, and the SPCO ensued. In January 2006, the SPCO issued the proper authorization for storage, after receipt of a Division of Oil & Gas authorization for storage.

To conclude the compliance oversight process for the release of interest, the compliance oversight team reviewed the entire length of the ROWs by helicopter, and landed at specially identified areas of interest. They reported that the ROWs appeared "to be free of extraneous debris and in good condition where State lands are concerned" and recommended that the release be finalized.

### 3.3.5 Appraisals

The most recent appraisal of State land in the Alpine ROWs, performed by MacSwain Associates, was submitted on October 31, 2003 by CPAI. AS 38.35 requires the lessee to pay fair market value to lease State lands in the ROW. The statute also requires periodic re-appraisal of the State ROW lands. Per the Alpine leases and grant, a re-appraisal is due every five years.

<u>Alpine Pipeline</u>	<u>ADL #</u>	<u>State Acres</u>	<u>Estimated Market Rent</u>
Oil Operations ROW	415701	148.66	\$22,299
Diesel Operations ROW	415932	148.51	\$22,276
Utility Operations ROW	415857	148.65	\$22,298

### **3.4 Upcoming Issues**

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#### **3.4.1 Lessee's Activities**

CPAI plans to upgrade the power system at the Colville River HDD site in 2006 to improve reliability for the cathodic protection system. The Alpine Diesel Pipeline is scheduled for a hydrostatic test in 2008 to evaluate potential pipeline corrosion.

#### **3.4.2 SPCO Compliance Oversight**

The compliance oversight team will conduct field surveillance of the Alpine pipelines and ROWs in July 2006 and will complete any necessary follow-up. The lessee's 2006 annual report, due January 31, 2007, will also be reviewed. Additional field surveillance may be conducted in FY07.

### **3.5 Contact Information**

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The Alpine leases/grant Section 30 require the lessee to designate in writing registered agents, field representatives, and authorized representatives. These contacts are the same for the two Alpine leases and Alpine Utility Pipeline grant.

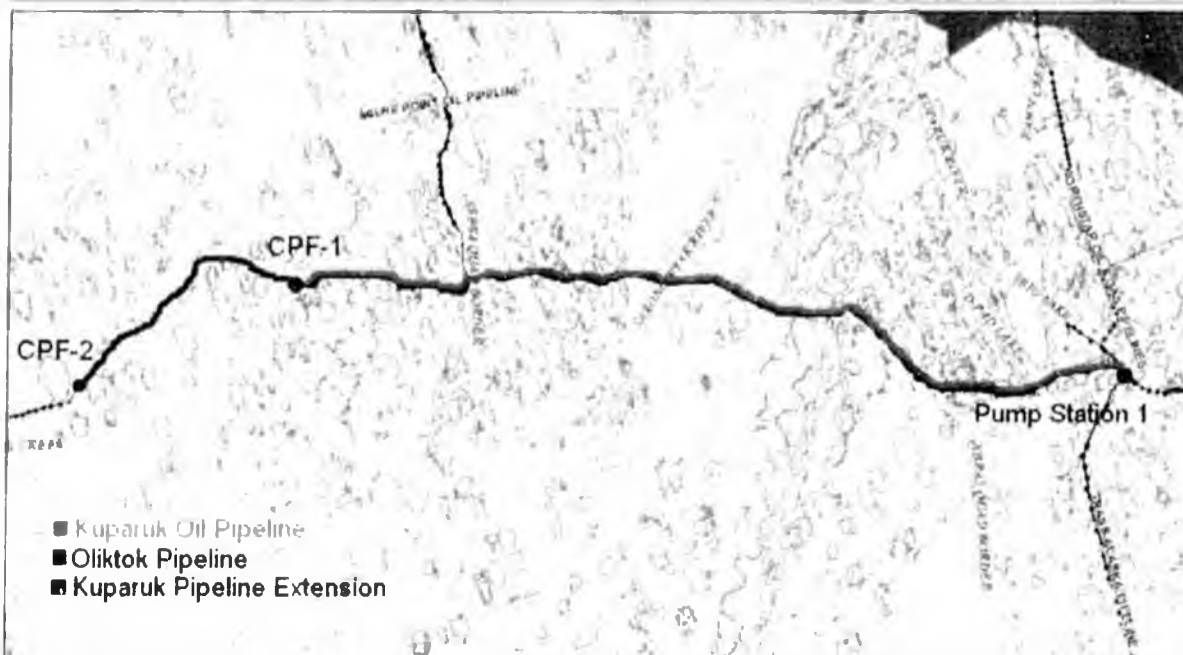
<i>Registered Agent</i>	Karen L. Kennedy
<i>Authorized Representative</i>	Operations and Engineering Manager Alpine Transportation Company ConocoPhillips Alaska, Inc. P.O. Box 100360 ATO 908 Anchorage, AK 99510-0360
<i>Primary Field Representative</i>	Chuck Knecht NSOD Pipeline Operations Supervisor ConocoPhillips Alaska, Inc. P.O. Box 196105, NSK 22 ConocoPhillips Alaska, Inc. Anchorage AK 99519-6105
<i>Alternate Field Representatives</i>	John Friemering or Dan Schmidt Alpine Pipeline Coordinators ConocoPhillips Alaska, Inc. P.O. Box 196860, ALP 15 Anchorage, AK 99519-6860

## NORTH SLOPE PIPELINES

### 4 Kuparuk and Oliktok Pipelines

ADL # 402294, 409027, and 411731

- 4.1 Lease and Right-of-Way Overview
  - 4.1.1 Kuparuk-Oliktok Corridor
  - 4.1.2 Kuparuk Oil Pipeline (ADL 402294)
  - 4.1.3 Kuparuk Pipeline Extension (ADL 409027)
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- 4.2 Lessee's Annual Report
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  - 4.3.2 Compliance Oversight
  - 4.3.3 Summary of Lease Compliance Observations: November 2005
  - 4.3.4 Appraisals
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  - 4.4.1 Lessee's Activities
  - 4.4.2 SPCO Compliance Oversight
- 4.5 Contact Information



The Kuparuk Oil Pipeline & Extension transport processed crude east to TAPS. The Oliktok Pipeline transports natural gas liquids west from Prudhoe Bay to Kuparuk.

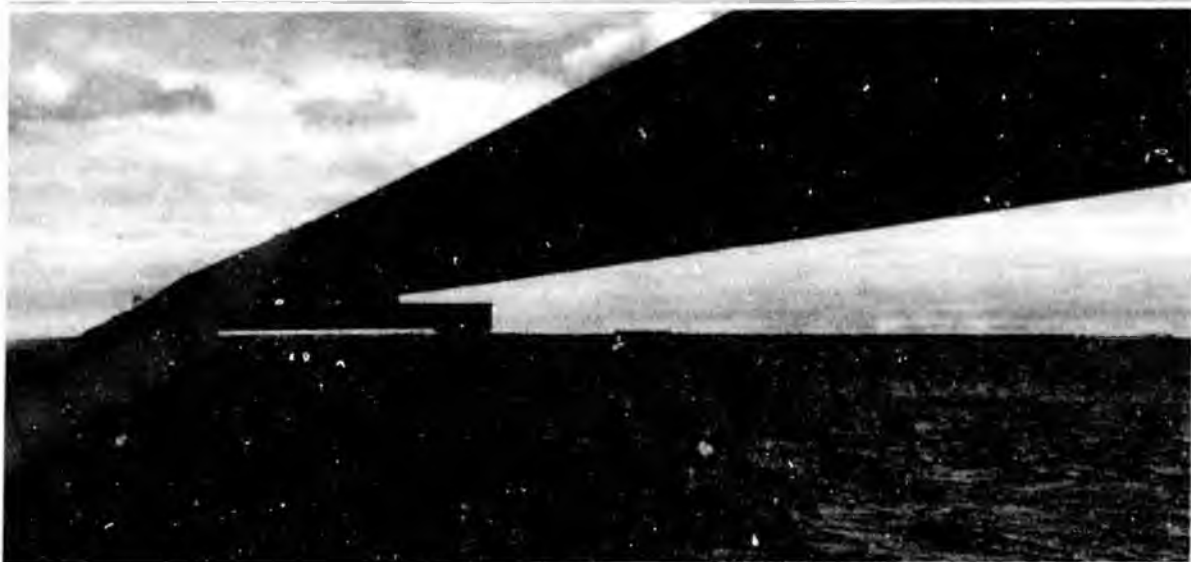
## **4.1 Lease and Right-of-Way Overview**

### **4.1.1 Kuparuk-Oliktok Corridor**

In the heart of North Slope oil development, the Kuparuk Pipeline (KPL) and its extension transport oil from Kuparuk and neighboring fields eastward to the Trans-Alaska Pipeline System Pump Station 1. The Oliktok Pipeline (OPL) transports natural gas liquids in the opposite direction, from Prudhoe Bay to Kuparuk. More pipeline-specific information is provided later in this section.

The Kuparuk and Oliktok rights-of-way overlap, but each has a separate lease agreement with the State of Alaska. The Kuparuk Oil Pipeline ROW lease agreement was issued August 26, 1980 between ADNOR and Kuparuk Pipeline Company (KPC). The Kuparuk Pipeline Extension ROW lease agreement, also with KPC, was issued April 18, 1983. In 2000, the KPL and KPL Extension leases were reassigned to Kuparuk Transportation Company (KTC). The Oliktok Pipeline ROW lease between the State of Alaska and Oliktok Pipeline Company (OPC) was issued June 1, 1986. As renewed in 2002, all three leases will expire May 2, 2034.

Both KPC and OPC are wholly owned subsidiaries of ConocoPhillips Company. KTC is owned by KPC, BPTA, and Union Kuparuk Pipeline Company. The Kuparuk Pipeline and Extension are owned by KTC. KPC is the managing partner of KTC. ConocoPhillips Company owns the Oliktok Pipeline. CPAI operates and maintains all three Kuparuk and Oliktok pipelines. CPAI is the ROW manager. KTC developed the *Kuparuk Pipeline Quality Program, Revision 1*, to ensure compliance with the State's ROW lease. This program was approved by the State Pipeline Coordinator on December 18, 2002. CPAI submitted the same quality program for KPL, OPL, and the KPL Extension.



*Here the Kuparuk and Oliktok Pipelines are depicted crossing tundra. The Kuparuk and Oliktok ROWs parallel Spine Road (out of frame) through this area.*

The KPL and OPL are both 28 miles long, and traverse land entirely owned by the State of Alaska. The KPL Extension begins an additional nine miles westward of the start of KPL and terminus of OPL, connecting Kuparuk CPF-2 into CPF-1. The State land includes 485.58 acres in the KPL ROW, 485.58 acres in the OPL ROW, and 159.09 acres in the KPL Extension ROW.

*Environmental concerns:* The Kuparuk and Oliktok pipelines are constructed on shared horizontal and vertical support members a minimum of five feet above the tundra to prevent permafrost degradation and permit wildlife passage. The KPL extension is also supported above-ground on VSMs. The pipeline corridors pass through wetland, pond, and riverine habitats supporting a variety of plants, fish, and wildlife.

*River Crossings:* The KPL and OPL cross the Kuparuk River Floodplain, and the East and West Tributaries of the Kuparuk River. At all river crossings, the pipelines are supported on VSMs, not trenched or drilled. The pipeline access road crosses over the Kuparuk River on the Bailey Bridge (Smith Creek) and Hamilton Bridge (Pebble Creek). The KPL and OPL cross Central Milne Creek, East Creek, Sakonowyak River, and the East and West Channels of the Putuligayak River. The KPL Extension crosses Ugnuravik River and a minor unnamed drainage.

*Buried Pipe:* There are sixteen road crossings along the OPL/KPL ROW and an additional eleven along the KPL Extension ROW. At road crossings, the pipelines are located in steel culverts covered by gravel. These areas are inspected annually to ensure that no soil or gravel is contacting the pipe.

*Other Pipelines:* Because the Kuparuk and Oliktok pipelines run across a long corridor of North Slope development, there are numerous locations where other pipelines are in the State ROW. Major projects within the ROW must be approved by the SPCO and cannot interfere with the safe operation of the common carrier pipelines.

*Lease:* Electronic copies of Kuparuk lease agreements and approved amendments are available at the SPCO website: <http://www.jpo.doi.gov/SPCO/SPCO.htm>.

#### **4.1.2 Kuparuk Oil Pipeline (ADL 402294)**

The 24-inch diameter Kuparuk Pipeline transports processed crude oil from the KPL Extension, Kuparuk oil fields, and BP-operated Milne Point Pipeline (MPPL) eastward to Pump Station 1. The KPL begins at Kuparuk CPF-1 and terminates 28 miles east at a pig receiver just inside the fence at PS-1, where the pipe diameter reduces to 16 inches. The 14-inch diameter MPPL ties into the KPL approximately six miles downstream of CPF-1.

The KPL was built with uncoated steel pipe of various thicknesses. The pipeline operates below a maximum operating pressure of 1,415 psig at 150° F. The KPL is insulated and wrapped in a galvanized steel jacket.

The 24-inch portions of the KPL are piggable, and CPAI cleans the piggable portion of the pipeline monthly with a maintenance pig. (In 2005, only 6 of 12 planned cleaning pigs were run). CPAI also uses instrumented (smart) pigs to detect potential corrosion on a three-year cycle. The last smart pig run was on June 23, 2003. The next smart pig

will be run through the KPL in late summer 2006. Portions of the KPL that are not piggable are inspected periodically with tangential radiography. Ultrasonic and other inspection techniques are also used. Additionally, CPAI employs corrosion coupons to assess potentially corrosive conditions in the pipeline. CPAI does not use corrosion inhibiting chemicals in the KPL.

The entire KPL is USDOT-regulated.



*Many species of migratory waterfowl inhabit State lands in the Kuparuk-Oliktok corridor. This pair of swans was spotted in the Kuparuk Extension ROW during July 2006 surveillance.*

#### **4.1.3 Kuparuk Pipeline Extension (ADL 409027)**

The KPL Extension begins in the Kuparuk River Unit at CPF-2. Here the Alpine Oil Pipeline ties into the KPL Extension for transport to PS-1. The KPL Extension also transports processed crude from CPF-2. Pipeline-related facilities at CPF-2 include a breakout tank and drag-reducing agent injection point.

The KPL Extension is made from a combination of 12- and 18-inch diameter pipeline designed to operate below 1,415 psig at 150°F. The KPL Extension begins at CPF-2 as a 12-inch pipeline. At approximately four miles, Spine Road intersects the 2Z-Pad access road. Here the KPL Extension changes to 18-inch pipe. It continues an additional five miles to Kuparuk CPF-1.

The KPL Extension is not piggable, so CPAI cannot use smart pigs as part of their integrity management program. CPAI uses tangential radiography to detect external corrosion at weld packs or damaged jacketing. Ultrasonic and other inspection techniques are also used. Additionally, CPAI uses corrosion coupons to assess potentially corrosive conditions in the pipeline, though no corrosion inhibitor is used.

The entire KPL Extension is USDOT-regulated.

#### **4.1.4 Oliktok Pipeline (ADL 411731)**

The OPL currently transports natural gas liquids from Prudhoe Bay Skid 50 to Kuparuk CPF-1. It was commissioned in 1981 to transport sales oil to PS-1 and was originally referred to as the Kuparuk Pipeline. In 1984, the new KPL was built and the

16-inch diameter pipeline was converted to natural gas transport and renamed the Oliktok Pipeline. In 1988 it was decommissioned. In 1995, the OPL was re-commissioned to transport NGL from the Central Gas Facility in Prudhoe Bay to Kuparuk. In 2001, the Milne Point Products Pipeline (currently in warm shutdown status) tied into the OPL at approximately 6 miles upstream from CPF-1.

The OPL was made from 16-inch diameter pipe, insulated and wrapped in galvanized steel jacketing. The OPL is designed for a maximum operating pressure of 1,415 psig at 150° F. The entire pipeline, 28 miles, is above-ground except for road crossings. The OPL begins adjacent to Skid 50 at Prudhoe Bay at an 8-inch manual valve. At Module 501, adjacent to PS-1, the pipe diameter increases to 16 inches and the OPL continues on the same horizontal and vertical supports as the KPL to Kuparuk CPF-1. At CPF-1, the OPL branches into two sections. The first goes to CPF-1 Module 100, where the system includes a pig launcher/receiver. The second segment decreases to 10-inch diameter and proceeds to Module CR02. In Module CR02, the OPL diameter reduces to 8 inches before terminating at an emergency shutdown remotely operated valve.

The OPL is not piggable, however, the system includes a pig launcher/receiver at both Module 501 and Module 100 at CPF-1. CPAI uses tangential radiography to detect external corrosion at weld packs or damaged jacketing. Ultrasonic and other inspection techniques are also used. Additionally, CPAI uses corrosion coupons to assess potentially corrosive conditions in the pipeline.

The entire OPL is USDOT-regulated.

## **4.2 Lessee's Annual Report**

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### **4.2.1 SPCO Review**

CPAI, operator of the Kuparuk and Oliktok pipelines, submitted one *2005 Annual Comprehensive Report on Pipeline Activities* to the SPCO for each Kuparuk and Oliktok pipeline on time in January 2006. CPAI's three reports provide detailed information on pipeline activities, and document lease compliance as required. The reports are pipeline- and ROW-specific and very detailed. On March 28, 2006, the SPCO issued a letter to CPAI commending the 2005 reports as outstanding, and confirming that they met all seven requirements for annual reporting. The seven requirements are listed in the Introduction Section.

### **4.2.2 Lessee's Activities**

*KPL Operations:* In calendar year 2005, the KPL was 100% available. It transported more than 125 million (125,751,224) barrels of processed crude from Alpine, the Greater Kuparuk Area, and Milne Point on to TAPS.