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STATE PIPELINE  
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September 1, 2017

Mr. Jason Walsh  
State Pipeline Coordinator  
Department of Natural Resources  
Division of Oil & Gas  
State Pipeline Coordinator's Section  
3651 Penland Parkway  
Anchorage, AK 99508

RE: Application for Pipeline Right-of-Way Lease  
CIGGS - A Marine Pipeline Conversion

Dear Mr. Walsh:

Enclosed please find the Cook Inlet Gathering System (CIGGS) - A Marine Pipeline Conversion Application for Pipeline Right-of-Way Lease.

Thank you again for this consideration.

Sincerely,

Michelle Brown  
Regulatory Compliance Specialist

Enclosure

**Right-of-Way Leasing  
Act AS 38.35.050**

**APPLICATION FOR PIPELINE RIGHT-OF-WAY LEASE**

**CIGGS – A Marine Pipeline Conversion**

**1. Date of Application:**

September 1, 2017

**2. Name and Address of Applicant(s):**

Harvest Alaska, LLC  
3800 Centerpoint Drive, Suite 1400  
Anchorage, AK 99503  
Phone: 907-777-8300; email: rnovcaski@hilcorp.com

**Authorized Agent:**

Harvest Alaska, LLC  
3800 Centerpoint Drive, Suite 1400  
Anchorage, AK 99503  
Phone: 907-777-8300; email: rnovcaski@hilcorp.com

## **PART I PROPOSED ROUTE**

On April 24, 1973, the Department of Natural Resources issued a right-of-way (ADL No. 56285) permit for two independent pipelines for the transportation of natural gas across Cook Inlet. These Dual Marine pipelines are referred to as the existing Cook Inlet Gathering System (CIGGS) pipelines.

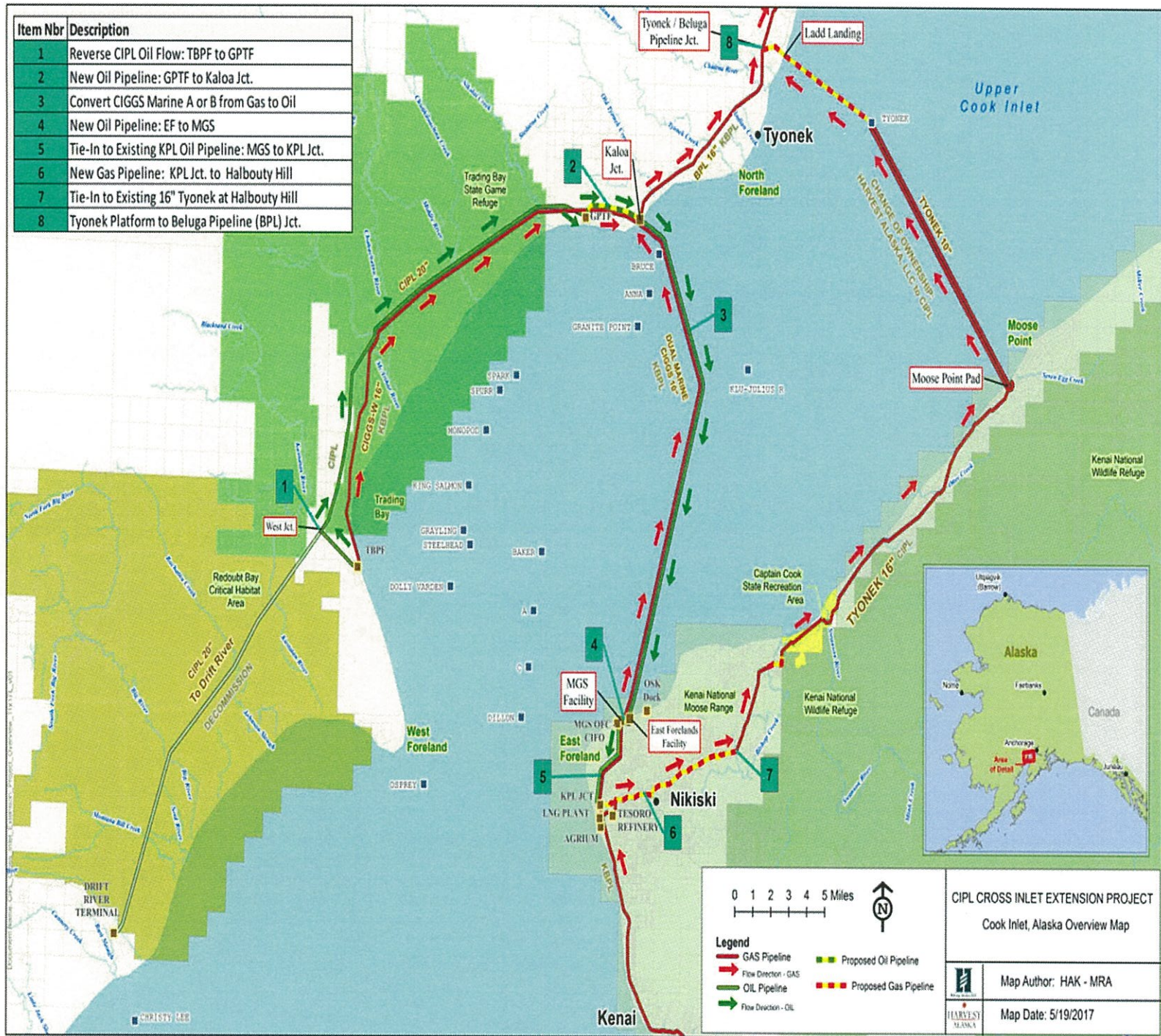
The Dual Marine CIGGS pipelines are one of four operating segments of the consolidated Kenai Beluga Pipeline system.

Harvest, Alaska LLC (Harvest Alaska) plans to convert one of the two existing CIGGS pipelines from gas service to oil service. The CIGGS-A Marine pipeline will be converted from gas to oil. The CIGGS-A Marine pipeline will become part of the existing Cook Inlet Pipeline (CIPL) Oil transportation system. CIPL is authorized by CPCN 303 to provide crude oil transportation services in the general area served by its existing facilities. CIPL's existing facilities consist of 44 miles of onshore crude oil pipelines on the west side of Cook Inlet, the Drift River Oil Terminal, including its oil storage tank farm, dual 2.7 mile-long offshore crude oil pipelines, and the offshore Christy Lee tanker terminal.

Crude oil is currently delivered to CIPL by Hilcorp Alaska at the Granite Point and Trading Bay Units and by Glacier Oil from its Redoubt and West McArthur Units. Crude oil delivered to CIPL at the Granite Point Tank Farm is transported south on the western shore of Cook Inlet in a 22-mile, 20-inch mainline pipeline segment to Trading Bay Junction.

Crude oil is delivered to CIPL from the Trading Bay Production Facility and from Cook Inlet Energy's Kustatan Production Facility. Combined crude oil is transported west in a 2.5-mile, 12.75-inch pipeline segment to Trading Bay Junction, where it intersects with the 20-inch mainline from the Granite Point Tank Farm.. From the Trading Bay Junction, combined crude oil volumes flow south along the west side of Cook Inlet in a 20-mile, 20-inch pipeline to the Drift River Oil Terminal, where crude oil is temporarily stored for load-out to crude oil tankers. The Drift River Oil Terminal is currently configured to store approximately 450,000 barrels of crude oil. During periodic tanker liftings crude oil is pumped via a 42-inch and dual 30-inch pipelines to the Christy Lee Tanker Terminal, where it is loaded into a tanker. Typical tanker liftings consist of 330,000 barrels of crude oil. Currently, crude oil is shipped by others via tanker from the Christy Lee Tanker Terminal across Cook Inlet to the Kenai Pipeline (KPL) dock facility for delivery to the Tesoro Refinery on the eastern shore of Cook Inlet at Nikiski.

This application is for the conversion of the existing CIGGS-A Marine pipeline from gas to oil.



**3. Point of Origin:**

The current CIGGS-A Marine pipeline point of origin is at the Kaloa Junction which is located in Section 25, Seward Meridian, Township 11 N, Range 12 W (S011N012W).

After the conversion the point of origin will be Trading Bay Production facility.

**4. Point of Termination:**

The point of termination for the CIGGS-A Marine pipeline is the East Forelands Facility which is located in Section 35, Seward Meridian, Township 18 N, Range 12 W (S018N012W).

**5. Total proposed length: \_\_\_ miles \_\_\_ kilometers**

CIGGS-A Marine Pipeline is a 21 mile long, 10-inch diameter pipeline.

Please see Part I – Proposed Route for description of CIPL Proposed oil pipeline system.

**6. Total length proposed to cross state lands: \_\_\_ miles \_\_\_ kilometers**

CIGGS - A Marine Pipeline has approximately 21 miles on State owned submerged and tidelands. Attached is a map showing all State owned lands in the Cook Inlet region.

**7. Attach a map or plat showing the proposed alignment of the centerline of the pipeline right-of-way and indicate the areas of state upland ownership throughout the length of the proposed right-of-way.**

See Question 6. GIS data is being provided for the CIGGS-A Marine pipeline under separate cover.

**8. Proposed crossings of streams and other bodies of water. (For each crossing indicate the width and depth of the stream or water body.)**

CIGGS-A Marine pipeline is a subsea pipeline. The subsea depth varies with a maximum depth of approximately 200ft. The onshore portions of the CIGGS-A Marine pipeline do not cross any streams or other bodies of water.

**9. Attach a map or plat showing the proposed alignment of the centerline of the pipeline right-of-way where it crosses the beds of streams or other bodies of water.**

Map attached.

**10. Width of the proposed temporary right-of-way required for construction for each segment of the pipeline route on state lands.**

No construction right-of-way width is needed.

- 11. Size and location of any sites, in addition to the proposed pipeline right-of-way, requested on a temporary basis during construction.**

n/a

- 12. Width of the proposed right-of-way required for operating the completed pipeline for each segment of the pipeline route on state lands.**

50 ft right-of-way; 25 ft on either side of centerline.

- 13. Size and location of any sites, in addition to the proposed pipeline right-of-way, requested for the operation of the completed pipeline.**

CIGGS-A Marine pipeline is an existing pipeline. This is a change of service; all existing infrastructure is already in place.

- 14. Legal description of state lands within the proposed pipeline right-of-way that are reserved or committed to any purpose. (For each tract of such state lands, state the purpose to which it is reserved or committed.)**

The CIGGS-A pipeline crosses the following sections of state waters.

T11N, R12W, S.M., Section 25;

T11N, R11W, S.M., Sections 30, 31, and 32;

T10N, R11W, S.M., Sections 5, 8, 16, 17, 21, 28, and 33;

T9N, R11W, S.M., Section 4, 9, 16, 17, 20, 29, 31, and 32;

T8N, R11W, S.M., Section 6

T8N, R12W, S.M., Sections 1, 12, 13, 24, 25, 26, and 35

Attached is a map showing all State owned lands in the Cook Inlet region. There are no reserved or committed lands within the right-of-way.

## **PART II PROJECT DESCRIPTION**

**15. Substance(s) to be transported:**

CIGGS-A Marine pipeline will transport crude oil.

Harvest Alaska, as Operator of the CIPL proposed oil pipeline system, would like the ability to revert the CIGGS-A Marine pipeline back to gas in the event of a Kenai Beluga Pipeline system emergency.

**16. Size, engineering and design characteristics and amount of each type of pipe to be used:**

CIGGS-A Marine pipeline is an existing pipeline. There are no proposed changes to pipeline size, engineering and design characteristics, or type of pipe.

The existing CIGGS A - Marine pipeline is a 21mile marine 10" pipeline. Specifications are as follows:

Outside diameter: 10.750"

Inside diameter: 9.562"

Wall thickness: 0.594"

Material: API 5L

Material Grade: X52

Seam Type: Seamless

Valve/Flange Rating: ANSI 600# & 900#

Year Installed: 1972

Please see narrative in Part I – Proposed Route for description of CIPL proposed oil pipeline system. Also, see attached Project Description.

**17. Size, number and location of pumping, compressing, heating or refrigeration stations:**

The CIGGS-A Marine pipeline is an existing subsea pipeline. There are no pumping, compressing, heating or refrigeration stations on the subsea pipeline.

**18. Transportation capacity of the proposed pipeline: \_\_\_per day**

CIPL's oil throughput capacity will be 52,000 bpd.

**19. Estimated life of the pipeline:**

The estimated economic life for oil service is 20 years. With proper maintenance, the pipeline could out live its economic life.

**20. Planned temperature at which each substance will be transported and whether it will be heated or refrigerated to maintain that temperature.**

Approximately 50 degrees. No heating or refrigeration is needed.

**21. The pipeline will be (check as appropriate):**

☐ Supported over the surface along its entire length

☐ On the surface along its entire length

☐ Partially buried along its entire length

☐ Completely buried along its entire length

☒ None of the above

(If this is checked, attach a map showing which portions of the pipeline are planned to be over the surface, on the surface, partially buried and wholly buried.)

CIGGS-A Marine pipeline is a subsea pipeline. No physical changes to the pipeline are proposed as part of the change of service.

CIGGS-A Marine pipeline was installed in 1972 and is located on the sea floor pinned sea-crete bags to stabilize and protect the pipeline from Cook Inlet tidal forces. Sea-Crete is a concrete product consisting of a special graded sand and Type I/II cement.

**22. Describe the methods to be employed for partially or completely burying any portion.**

CIGGS-A Marine pipeline is already installed and no further burial is required.

**23. Describe any bridges, trestles, other structures or berms for the support of the proposed pipeline.**

CIGGS-A Marine pipeline is an existing subsea pipeline. No bridges, trestles, or other structures are used to support the existing pipeline.

**24. Describe the proposed method for all stream crossings and crossings of other bodies of water.**

CIGGS-A Marine pipeline is an existing subsea pipeline. No physical changes to the pipeline are proposed as part of the change of service.

CIGGS-A Marine pipeline was installed in 1972 and is located on the sea floor pinned sea-crete bags to stabilize and protect the pipeline from Cook Inlet tidal forces. Sea-Crete is a concrete product consisting of a special graded sand and Type I/II cement.

**25. Describe the proposed methods for grades, cuts or fills.**

CIGGS-A Marine pipeline is an existing subsea pipeline and no further grades, cuts or fills are needed. Every spring Harvest Alaska, as Operator, hires a sonar contractor to perform seabed imaging along, and immediately adjacent to, Harvest Alaska's Cook Inlet subsea pipelines. The purpose for this survey is to identify areas of erosion underneath the pipelines (unsupported spans) and potential seafloor hazards that could pose a concern for the integrity of the pipelines. From the results of this survey, every summer Harvest Alaska contracts divers to verify erosion and unsupported spans. Divers mitigate the threat of erosion and vortex induced vibration utilizing sacks of custom made cement-mix for Cook Inlet called "Sea-Crete" that is used to help stabilize the pipeline and protect it from the extreme Cook Inlet tidal forces.

**26. Discuss planned facilities for spill or leak prevention and containment.**

CIPL proposed oil pipeline system uses a leak detection system called ATMOS. CIGGS-A Marine pipeline will be incorporated into the existing ATMOS system for leak detection.

ATMOS is a statistical mass balance leak detection system. Flow verification is implemented through this leak detection system and verified with a daily volume accounting system. Data is displayed continuously on the SCADA display in the control room. The system monitors the pressure and operational parameters of the system. There is a leak detect alarm for both the static and transient condition that is tied into the SCADA system at the Kenai Control Room which is staffed 24 hours a day.

**27. Proposed access roads, airstrips, heliports, float plane facilities, communication facilities, storage sites for equipment and materials, material sites, and material disposal sites, whether planned for construction, operation or maintenance support:**

The CIGGS-A Marine pipeline is an existing subsea pipeline. No access roads, airstrips, heliports, float plane facilities, communication facilities, storage sites, or material disposal sites are proposed for the CIGGS-A Marine pipeline change of service. No physical changes to the pipeline are proposed as part of the change of service.

There will be no change to the facility to support the conversion of service. CIPL proposed oil pipeline has access to two existing airstrips: one located at the Trading Bay facility and one at Granite Point. The CIPL proposed oil pipeline is accessible via vehicle or ATV on the West side of Cook Inlet and is road accessible on the East side of Cook Inlet.

**28. Size, number, approximate location and planned duration of field camps:**

New camps are not proposed at this time. It is anticipated that personnel supporting conversion efforts will be housed in existing facilities.

CIPL proposed oil pipeline system has access to two existing permanent man camps: one

located at the Trading Bay facility and one located at Granite Point.

**29. Size, number and approximate location of housing for personnel operating or maintaining the pipeline:**

The CIGGS-A Marine pipeline is an existing subsea pipeline. There are no anticipated changes to the current number of personnel operating and maintaining the pipeline.

CIPL proposed oil pipeline system has access to two existing man camps: one located at the Trading Bay facility and one located at Granite Point. See Question 32 for additional information.

**30. Size, number and approximate location of health care facilities:**

Harvest Alaska is an established Operator in the Cook Inlet. The Trading Bay facility has emergency care capabilities. Also, emergency medivac services are available.

Health care facilities are located in Kenai Peninsula, Homer and Anchorage.

**Kenai Peninsula:**

Central Peninsula Hospital, 250 Hospital Place, Soldotna, AK 99669

Large Rural - Approximately 117 beds

MediCenter Kenai, 10543 Kenai Spur Hwy, Kenai, AK 99611, 47783 Kenai Spur Hwy,

Nikiski, AK 99611, 100 Trading Bay, Suite 4 & 8, Kenai, AK 99611

**Homer:**

South Peninsula Hospital, 4300 Bartlett Street, Homer, AK 99603

Medium Rural – 50 beds

**Anchorage:**

Providence Alaska Medical Center, 3200 Providence Drive, Anchorage, AK 99508

Large Rural – 401 beds

Alaska Regional Hospital, 2801 Debarr Road, Anchorage, AK 99508

Large Rural – 132 beds

Alaska Native Medical Center, 4315 Diplomacy Drive, Anchorage, AK 99508

Large Rural – 150 beds

There are number of Urgent care facilities in Anchorage.

**31. Approximate number of persons to be employed during construction:**

The CIGGS-A Marine pipeline is an existing subsea pipeline. This is a conversion of service. We anticipate a small crew of approximately 10 personnel to assist in the conversion of service activities.

**32. Approximate number of persons to be employed to operate and maintain the pipeline:**

The CIGGS-A Marine pipeline is an existing subsea pipeline. There are no anticipated changes to the current number of personnel operating and maintaining the pipeline.

There are currently approximately 23 shared staff working the Cook Inlet pipeline assets (i.e., Kenai Beluga Pipeline System, Swanson River pipeline and CIPL) with an additional 14 CIPL dedicated employees. In addition, there are a number of specialized staff available in Anchorage and Houston to provide technical and administrative support as needed to support the Cook Inlet assets.

**33. Planned commencement date for construction:**

The CIGGS-A Marine pipeline is an existing subsea pipeline. The planned conversion of service will take place summer of 2018. This will include a PHMSA hydrotest of the CIGGS-A Marine pipeline.

Modifications to the overall CIPL proposed oil pipeline system will begin in first quarter of 2018. Please see attached Project Description for identified modifications.

**34. Estimated construction time:**

The CIGGS-A Marine pipeline is an existing subsea pipeline. It is anticipated that the conversion service will take place summer 2018.

**35. Planned commencement date for operations:**

The planned first oil across the CIGGS-A Marine existing subsea pipeline is anticipated for fall 2018.

**36. Estimated cost of materials: \$\_\_**

The CIGGS-A Marine pipeline is an existing subsea pipeline. No physical change to the subsea pipeline is proposed as part of the change of service, therefore no materials are required.

**37. Estimated cost of construction and installation: \$\_\_\_\_**

The CIGGS-A Marine pipeline is an existing subsea pipeline. No physical change to the subsea pipeline is proposed as part of the change of service, therefore no construction or installation is required.

**38. Estimated annual cost for operations and maintenance: \$\_\_per year**

The estimated annual costs for operations and maintenance are expected to be the same as current costs. The average operation and maintenance costs for the subsea section are approximately \$200k.

**PART III**  
**AVAILABILITY OF INTERCONNECTIONS, TERMINAL FACILITIES**  
**AND STORAGE FACILITIES**

**39. Describe how the proposed pipeline will connect with planned field gathering systems, if any.**

The CIGGS-A Marine pipeline section is not connected to any field gathering systems.

The CIPL proposed oil pipeline system receipt points are at the Trading Bay Production Facility, the Granite Point Facility and Kustatan.

**40. Discuss the technical and economic feasibility of providing connections with other field gathering systems at intermediate points along the proposed pipeline.**

The CIPL proposed oil pipeline system is a common carrier pipeline and would be obligated, upon entering into an approved connection agreement, to be open to future connections.

The CIGGS-A Marine pipeline is a subsea pipeline therefore it is highly unlikely there will be any connections requested with other field gathering systems.

**41. Discuss the technical and economic feasibility of providing connections or interchanges with other pipelines at intermediate points along the proposed pipeline.**

The CIPL proposed oil pipeline system is a common carrier pipeline and would be obligated, upon entering into an approved connection agreement, to be open to future connections.

The CIGGS-A Marine pipeline is a subsea pipeline therefore it is highly unlikely there will be any requests for new connections with other pipelines.

**42. Describe the location, area and capacity of proposed tank farms or other storage facilities.**

The CIGGS-A Marine pipeline does not have any proposed tank farms or storage facilities.

The CIPL Oil Pipeline system will deliver to Kenai pipeline which has tankage that services the Tesoro (Andeavor) refinery.

**43. Provide locations of and describe any terminal delivery facility of the proposed pipeline.**

The CIGGS-A Marine pipeline does not have a terminal delivery facility.

The CIPL proposed oil pipeline system will deliver to the Kenai pipeline at Nikiski.

**44. Discuss the technical and economic feasibility of providing delivery facilities at intermediate points along the proposed pipeline.**

The CIGGS-A Marine pipeline is a subsea pipeline therefore there will be no delivery facilities at any point along the section.

The CIPL proposed oil pipeline system is a common carrier pipeline and would, upon entering into an approved connection agreement, be open to future delivery facilities.

**PART IV**  
**SAFEGUARDS FOR PERSONS, PROPERTY, THE PUBLIC,**  
**AND THE ENVIRONMENT**

**45. Describe your plans to detect and abate any condition possibly arising from the construction, operation, maintenance or termination of all or any part of the proposed pipeline that may cause or threaten to cause a hazard to the safety of workers on the pipeline project.**

The CIGGS-A Marine pipeline is an existing subsea pipeline. No construction activities or physical changes to the CIGGS-A Marine pipeline are proposed as part of the change of service. All operation, maintenance and termination activities will remain the same.

Harvest Alaska, as Operator, has an SPCS approved Quality Assurance Plan and Surveillance & Monitoring Plan that will be modified to include the CIGGS-A Marine Pipeline.

Harvest Alaska, as Operator, maintains a number of internal programs and procedures to detect and abate the safety of the workers, public and environment. Some of the programs include, but are not limited, to the following:

- Pipeline Specific Operation and Maintenance Manuals (PSOMs)
- Hazardous Liquid Integrity Management Program
- Alaska Public Awareness Program
- Oil Spill Contingency and Response Plans
- Operator Qualification Program
- Pipeline Control Room Management

CIPL proposed oil pipeline modifications will be conducted under site-specific Environmental, Health and Safety plans to ensure that development and operational activities are conducted in full compliance with regulations and permits, and fully implemented agreed to environmental mitigation measures to protect human health and the environmental. In addition to Environmental, Health and Safety plans, a Construction Plan will be developed to outline construction methods to identify potential problems and verify that work is performed in accordance with applicable permit requirements, and to maintain the quality and integrity of the pipeline.

**46. Describe your plans to detect and abate any condition possibly arising from the construction, operation, maintenance or termination of all or any part of the proposed pipeline that may cause or threaten to cause a hazard to the public health and safety.**

The CIGGS-A Marine pipeline is an existing subsea pipeline. No construction activities or physical changes to CIGGS-A Marine pipeline are proposed as part of the change of service. All operation, maintenance and termination activities will remain the same.

C IPL proposed oil pipeline system: The measures outlined in #45 also detect, abate and mitigate risk to public health and safety.

There is limited access to the West side of C IPL proposed oil pipeline system. The remote location of the pipeline makes accidental access by the general public unlikely. The East side C IPL proposed oil pipeline system is mostly buried and well-marked for public safety.

Harvest Alaska has an approved U.S. Department of Transportation and Hazardous Materials Safety Administration (PHMSA) public awareness program.

**47. Describe your plans to detect and abate any condition possibly arising from the construction, operation, maintenance or termination of all or any part of the proposed pipeline that may cause or threaten to cause serious and irreparable harm or damages to public or private property.**

The CIGGS-A Marine pipeline is an existing subsea pipeline. No construction activities or physical changes to CIGGS-A Marine pipeline are proposed as part of the change of service. All operation, maintenance and termination activities will remain the same.

Harvest Alaska, as Operator, is in compliance with all existing permits and land owner right-of-ways.

The measures outlined in #45 and #46 also detect, abate and mitigate harm or damage to private or public property.

**48. Describe your plans to detect and abate any condition possibly arising from the construction, operation, maintenance or termination of all or any part of the proposed pipeline that may cause or threaten to cause serious and irreparable harm or damages to vegetation or timber.**

The CIGGS-A Marine pipeline is an existing subsea pipeline. No construction activities or physical changes to CIGGS-A Marine pipeline are proposed as part of the change of service. All operation, maintenance and termination activities will remain the same.

C IPL proposed oil pipeline system modifications are being made in existing rights-of-way limiting the impact to vegetation or timber. All required environmental permits are being applied for and we will comply with all permit requirements.

The measures outlined in #45, #46 and 47 also detect, abate and mitigate harm or damage to vegetation or timber. In addition, see #54 for description of Alaska Department of Environmental Conservation approved Contingency Plan for spills or release response.

**49. Describe your plans to detect and abate any condition possibly arising from the construction, operation, maintenance or termination of all or any part of the proposed pipeline that may cause or threaten to cause serious and irreparable harm or damages to fish or other wildlife or to their habitats.**

The CIGGS-A Marine pipeline is an existing subsea pipeline. No construction activities or physical changes to CIGGS-A Marine pipeline are proposed as part of the change of service. All operation, maintenance and termination activities will remain the same.

Harvest Alaska, as Operator, is working with State and local agencies to ensure all required permits are obtained for the modification of the CIPL proposed oil pipeline system.

The measures outlined in #45, #46 and 47 also detect, abate and mitigate harm or damage fish or wildlife. In addition, see #54 for description of Alaska Department of Environmental Conservation approved Contingency Plan for spills or release response.

**50. Describe your plans for restoring areas of vegetation or timber damaged or harmed directly or indirectly by the construction, operation, maintenance or termination of all or any part of the proposed pipeline.**

The CIGGS-A Marine pipeline is an existing subsea pipeline. No construction activities or physical changes to the pipeline are proposed as part of the conversion of service. All operation, maintenance and termination activities will remain the same.

See Question 48.

**51. Describe your plans for abating erosion and restoring areas eroded as a direct or indirect result of the construction, operation, maintenance or termination of all or any part of the proposed pipeline.**

CIGGS-A Marine pipeline is an existing subsea pipeline was installed in 1972. Every spring Harvest Alaska, as Operator, hires a sonar contractor to perform seabed imaging along, and immediately adjacent to, Harvest Alaska's Cook Inlet subsea pipelines. The purpose for this survey is to identify areas of erosion underneath the pipelines (unsupported spans) and potential seafloor hazards that could pose a concern for the integrity of the pipelines. From the results of this survey, every summer Harvest Alaska contracts divers to verify erosion and unsupported spans. Divers mitigate the threat of erosion and vortex induced vibration utilizing sacks of custom made cement-mix for Cook Inlet called "Sea-Crete" that is used to help stabilize the pipeline and protect it from the extreme Cook Inlet tidal forces.

**52. Describe your plans for quality control and your procedures for inspection and testing the pipeline, both during and after construction.**

Harvest Alaska, as Operator, has an SPCS approved Quality Assurance Plan. This plan will be modified to include the CIGGS-A Marine pipeline.

Additionally, the conversion of service will meet PHMSA requirements and associated approvals. Specific hydro-testing procedures are being developed. All operation, maintenance and termination activities will remain the same.

**53. Describe your plans to ensure compliance by your contractors and subcontractors with the safeguards and stipulations of the right-of-way lease, if issued.**

All contractors will be required to have the required OQ qualifications. Inspectors will be on-site to perform appropriate QA/QC. See also Question #45.

**PART V**  
**SPECIAL SAFEGUARDS FOR NATIVES AND OTHERS SUBSIDING ON THE BIOTIC  
RESOURCES OF THE GENERAL AREA OF THE PROPOSED RIGHT-OF-WAY**

**54. Describe your plans and procedures to protect the interests of individuals living in the general area of the proposed right-of-way who rely on the fish, wildlife and biotic resources of the area for subsistence purposes.**

The CIGGS-A Marine pipeline is an existing subsea pipeline. All operation, maintenance and termination activities will remain the same.

Harvest Alaska has a Department of Environmental Conservation approved Contingency and Response Plan. This comprehensive plan details how to respond to an emergency to protect the public and environmental habitat. This plan is tested every year under the direction of the Department of Environmental Conservation and in conjunction with other agencies (i.e, U.S. Coast Guard). The Plan will be updated and approved as part of the conversion of service. Harvest Alaska also has a contract with Cook Inlet Spill Prevention & Response, Inc. (CISPRI) to respond to an event or emergency in Cook Inlet.

CISPRI is a certified Oil Spill Removal Organization (United States Coast Guard OSRO) and State of Alaska Primary Response Action Contractor (PRAC) serving the Cook Inlet region of Alaska. CISPRI is a member-owned non-profit corporation providing oil spill planning, training, and response services to facilities and vessels throughout the Cook Inlet region.

CISPRI maintains an inventory of response resources strategically located in caches throughout the Cook Inlet region and ready to deploy on behalf of our member companies. In addition to CISPRI's extensive equipment cache, we have mutual aid agreements in place with other Alaska OSROs to supplement our response capabilities. CISPRI also maintains contracts with spill response professionals to supplement our Incident Management Team during a large incident, vessel owners in the Cook Inlet region to support our on-water response operations, and other response organizations to provide specialized functions such as shoreline assessment, wildlife response, and waste management and disposal.

**PART VI  
FINANCIAL INFORMATION**

**55. Describe the probable financing requirements for the proposed pipeline.**

No outside funding is required for this project.

**56. Attach an annual financial statement and balance sheet for each applicant, prepared in accordance with generally accepted accounting principles for each of the applicant's three fiscal years immediately preceding the date of this application. The financial statement must be certified by a firm of reputable and independent Certified Public Accountants.**

Confidential audited financial statements are being provided under separate cover.

**PART VII  
OTHER INFORMATION**

**57. Name and address of the proposed general contractor(s) for constructing the pipeline:**

The CIGGS-A Marine pipeline is an existing subsea pipeline. The contractor for work associated with the conversion of service (i.e., hydro-test of the pipeline) has not been chosen at this time.

All operation, maintenance and termination activities will remain the same.

**58. Name and address of the proposed operator of the pipeline:**

Harvest Alaska will Operate the CIGG-A Marine pipeline on behalf of Kenai Beluga Pipeline.

Harvest Alaska, LLC  
3800 Centerpoint Drive, Suite 1400  
Anchorage, AK 99503  
(907) 777-8336; rnovcaski@hilcorp.com

**59. Other information you believe may aid in the consideration of this application.**

The purpose of this and related applications is to facilitate the reconfiguration of the oil and natural gas pipeline infrastructure in the Cook Inlet area to meet the current needs of pipeline shippers, while making the best use of existing infrastructure and rights-of-way

**A. General Benefits**

In general, the overall project will improve environmental safety and efficiency in the oil and natural gas transportation systems in the Cook Inlet area, and will stimulate economic activity in the region. A primary general benefit of the overall project will be the reduction of environmental safety risks inherent in the marine transport of crude oil by tankers and the storage of oil in area that is volcanically active. Eliminating tanker traffic across Cook Inlet and removing the oil stored in tanks at the Drift River Oil Terminal from the risks associated with volcanic activity in that area will significantly reduce the environmental risk exposure of the oil transportation system. The proposed system modifications will also substantially reduce the amount of oil that is stored in any one location, thereby eliminating the risk of a large spill of stored oil.

The proposed system modifications will make more efficient use of rights-of-way and existing infrastructure will be put to its highest and best use. The overall project is designed to reduce the overall costs of transporting hydrocarbons in the Cook Inlet area while at the same time improving and enhancing the quality and efficiency of transportation service. Infrastructure that is no longer needed will be removed from service and existing infrastructure will be reconfigured to provide more efficient transportation service. This will have long-lasting positive benefits for the economy in Southcentral Alaska.

## **B. Benefits Relating to the Oil Production and Transportation System**

The overall project will bring substantial benefits to the industries and businesses involved in the production and transportation of crude oil in the Cook Inlet area and to other businesses that are dependent upon an efficient and well-functioning oil production and transportation system. In addition to the environmental safety benefits of the Reconfiguration Plan, the elimination of tanker traffic costs will result in an overall reduction of transportation costs for oil produced on the west side of Cook Inlet, thereby economically benefitting CIPL shippers and the end-users of oil produced in the Cook Inlet area. Eliminating the need for the Drift River Oil Terminal facilities, the Christy Lee Platform and CIPL piping south of Kustutan on the west side of Cook Inlet, and the decommissioning of those components of the CIPL system will result in a more economically efficient system.

The overall reduction of transportation costs for oil produced on the west side of Cook Inlet will extend the economic viability of Cook Inlet oil production and the Tesoro Refinery. This will benefit the State as well as the oil producers, the Tesoro Refinery, and other elements of the local economy. The State will continue to receive royalty revenues from the continuing production of oil in the Cook Inlet area and the general economic benefits of continuing oil production, which provides both direct oil industry and supporting services industry jobs for the local workforce.

## **C. Benefits Relating to the Natural Gas Transportation System**

The proposed system modifications relating to natural gas transportation will enhance the operational redundancy of the existing system, improve operating efficiency, and increase system capacity, with no additional cost to KBPL customers. The Reconfiguration Plan therefore provides benefits to natural gas shippers as well as oil shippers.

By separating the transportation functions of the existing dual CIGGS-A and CIGGS-B lines and making the Tyonek Pipeline system available for gas transport, thereby providing for an alternative gas line that is physically separated from the dual CIGGS lines by a distance of more than ten miles, the risk of a disabling event to both dual lines in a common incident such as an anchor strike is eliminated. The Tyonek Pipeline will serve an important purpose by mitigating the risk of a system-wide disabling event caused by a common incident.

The overall project will also improve the operating efficiency of the natural gas transportation system. At this time, the gas produced at the Tyonek Platform, located in Upper Cook Inlet, must travel a circuitous route to the west side of Cook Inlet in order to be further transported to end users in Anchorage and the Matanuska Valley. The Reconfiguration Plan will provide a more efficient, direct route for transportation of gas produced at the Tyonek Platform to the west side of Cook Inlet.

The addition of the Tyonek Pipeline to the gas transportation system will provide for increased transmission capacity beyond what is currently available with the dual CIGGS-A

and CIGGS-B lines, because the Tyonek Pipeline will have a greater carrying capacity than the CIGGS-A line it will replace. The throughput capacity of the gas transportation system will thus be increased without any increased cost to KBPL customers.

The Reconfiguration Plan will result in improved safety and operating efficiency, as well as economic substantial benefits to oil and gas pipeline shippers, oil producers and refiners, the State, and the general public. The Reconfiguration Plan will extend the period of time in which oil can continue to be produced in the Cook Inlet area. This Application is a key component of the Reconfiguration Plan and therefore the granting of this Application is required for present and future public convenience and necessity and is in the best interest of the public.

APPLICATION FEES ARE AS FOLLOWS:  
Less than 50 miles -\$500.00 More than 50 miles -\$1,000.00

## **Harvest, Alaska LLC. – Cross Inlet Pipeline Extension Project Project Description**

Harvest, Alaska LLC (Harvest) plans to modify the Cook Inlet Pipeline (CIPL), Tyonek Pipeline, and the CIGGS gas pipeline to:

### **Oil**

- Move crude oil passage from the west to east side of Cook Inlet via pipeline.
- Eliminate tanker traffic from Christy Lee to KPL Dock.
- Significantly reduce quantity of stored oil in one location, reducing spill risk.
- Decommission Drift River Terminal, Christy Lee, and CIPL piping south of Kustutan.
- Reduce total transportation costs and extend life of Cook Inlet oil production.
- Extend economic viability of Tesoro Refinery.

### **Gas**

- Enhance redundancy and reduce risk to two lines through 10+ mile separation.
- Increase east-to-west throughput capacity.
- Allow direct transportation of gas from Tyonek platform to west side.

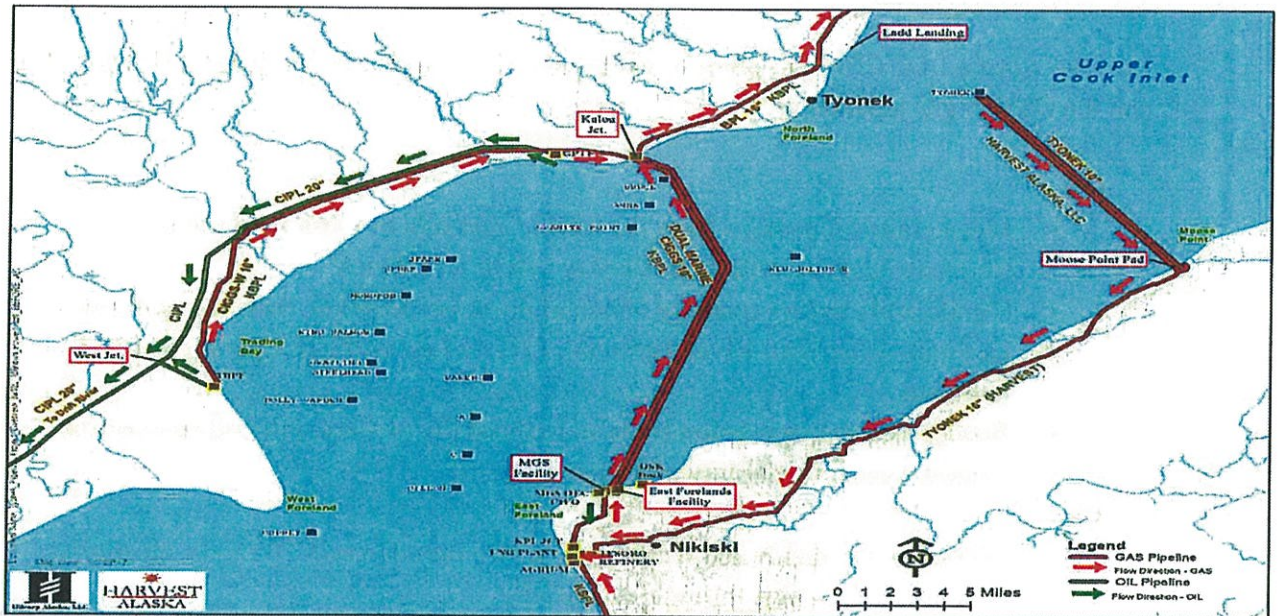
### **Project**

- More efficient use of rights-of-way.
- Highest and best use of regulated infrastructure.
- Construction activity will benefit suppliers and workers in Cook Inlet basin.

This project includes new onshore and offshore pipelines, pipeline conversion of service, pipeline junctions, pumping station, shutdown valve stations, and work pads as well as modifications to existing mechanical, electrical, civil, cathodic protection, and structural infrastructure.

# Harvest, Alaska LLC. –Cross Inlet Pipeline Extension Project Project Description

## 1.0 Current Oil and Gas Flows



### 1.1 Oil

Crude oil is currently produced at Hilcorp, Alaska LLC (Hilcorp) facilities in the west Cook Inlet area in the Granite Point Unit (GPU) and the Trading Bay Unit (TBU). Crude oil produced in the GPU flows to the onshore Granite Point Tank Farm (GPTF). From the GPTF, the crude oil currently flows southwest in the CIPL 20 through Trading Bay Junction to the Drift River Oil Terminal. Crude oil produced in the Trading Bay Unit (TBU) flows to the onshore Trading Bay Production Facility (TBPF) where it continues in the CIPL 12 until it reaches Trading Bay Junction and from there flows south in the CIPL 20 to the Drift River Oil Terminal. Once received at the Drift River Oil Terminal, the crude oil is transferred through a pipeline to the Christy Lee Platform where it is loaded onto a tanker and transported across Cook Inlet to the Tesoro Refinery on the east side of Cook Inlet.

### 1.2 Gas

Natural gas is also produced in the GPU and TBU and is the exclusive product produced at the Tyonek Platform in the north Cook Inlet area. Gas from the GPU and TBU follows the same path to shore as the crude oil. Gas from the TBU passes through the TBPF as it flows north in the Cook Inlet Gas Gathering System

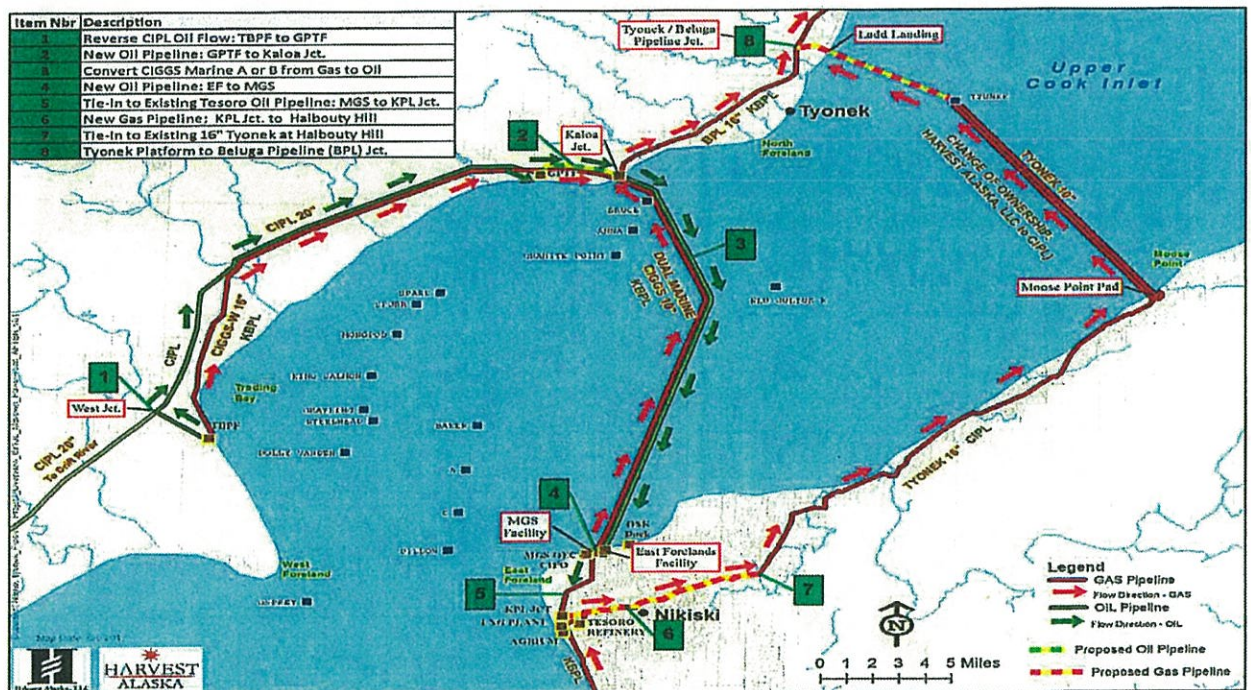
## Harvest, Alaska LLC. –Cross Inlet Pipeline Extension Project Project Description

– West (CIGGS-W) pipeline segment of KBPL near the CIPL 20 passing through the GPTF. Additional gas from the GPU is added at Kaloa Junction, and the gas travels either north in the BPL segment of KBPL or east in the dual marine CIGGS segments of KBPL to various end users.

The gas produced at the Tyonek Platform currently flows southeast in the Tyonek N 10 Pipeline to Moose Point Pad on the east side of Cook Inlet, and from there flows south in the Tyonek 16 Pipeline to the Conoco Kenai liquefied natural gas (LNG) Plant and into the existing Nikiski area gas system.

Gas produced from various East side production facilities is routed via pipelines to KPL Junction where it is compressed and sent via pipelines to various end points. The system allows gas to flow northwest across Cook Inlet from East Forelands through the CIGGS-A and CIGGS-B subsea pipeline segments of KBPL to Kaloa Junction and into the BPL segment of KBPL.

### 2.0 New Oil and Gas Flows



When the new pipelines are installed and junctions have been modified and/or created, the flow of crude oil and natural gas will be changed in some portions of the existing pipeline systems. Gas in the Tyonek 16 will flow from KPL Junction north through Moose Point Pad and across the Cook Inlet through the existing subsea pipelines to the

## Harvest, Alaska LLC. –Cross Inlet Pipeline Extension Project Project Description

Tyonek Platform. This gas and gas produced at the Tyonek Platform will flow west via a new subsea pipeline through Ladd Landing onshore to a new tie-in into the BPL segment of KBPL at the new BPL Junction. This onshore/offshore pipeline section will be identified as Tyonek W 10.

The new Tyonek Platform to BPL segment of the KBPL results in a pipeline system that maintains current gas flow rate capacity between the east and west side of Cook Inlet after the CIGGS-A segment of KBPL is converted from gas to crude oil service. The new gas system for cross inlet flow will include the CIGGS-B segment of KBPL and the KPL Junction to Moose Point to Tyonek Platform to BPL Junction network.

Crude oil produced in the TBU will still flow onshore from the platforms through TBPF, and then to Trading Bay Junction in the CIPL 12. The crude oil will then flow north along the existing CIPL 20 to the GPTF. Crude oil produced in the GPU will still flow onshore, through GPTF. At GPTF, the GPU flow will join with crude oil from TBU and flow northeast through a new onshore pipeline section (CIPL W 10) from GPTF to Kaloa Junction. The crude oil will then flow south across to the East side of Cook Inlet in the CIGGS-A to East Forelands. A short section of new on-shore pipeline will be installed between East Forelands and MGS Facility, where it will connect to Tesoro's existing MGS 12 pipeline that currently is used to transfer oil from MGS Facility to Tesoro's KPL Tank Farm.

New Pipeline Names for CIPL System		
LEGACY NAME	PIPELINE	START/FINISH
<i>CIPL Oil System</i>		
CIPL 12	CIPL 12	TBPF/Trading Bay Jct.
CIPL 20	CIPL 20	Trading Bay Jct./GPTF
NEW	CIPL W 10	GPTF/Kalao Jct.
CIGGS 10 (COS)	CIPL Marine A 10	Kalao Jct/East Forelands
NEW	CIPL E 10	East Forelands/MGS Facility
MGS 12 (Tesoro)	MGS 12	MGS Facility/KPL Tank Farm
<i>CIGGS Gas System</i>		
CIGGS	CIGGS B 10	East Forelands/Kalao Junction
<i>Tyonek Gas System</i>		
Tyonek Gas 16	Tyonek E 10	KPL Junction/Halbouty
Tyonek 16	Tyonek E 16	Halbouty/Moose Point Pad
Tyonek S 10	Tyonek S 10	Moose Point Pad/Tyonek Platform

**Harvest, Alaska LLC. –Cross Inlet Pipeline Extension Project  
Project Description**

Tyonek N 10	Tyonek N 10	Moose Point Pad/Tyonek Platform
NEW	Tyonek W 10	Tyonek Platform/BPL Jct.

### **3.0 Proposed Work**

#### **3.1 Oil System**

##### **3.1.1 TBPF**

The existing shipping pumps at TBPF will be modified to fit the new flow requirements for flowing oil north into the CIPL system instead of south to Drift River. Restaging or replacement of the pumps and modification to controls is anticipated.

##### **3.1.2 CIPL 12 from TBPF to Trading Bay Junction**

A 16 foot wide access route will be developed to allow yearly access to Trading Bay Junction via small trucks. The access route will start from the Kustatan Solid Waste Site north to intersect with the CIPL 20 ROW, then follow the CIPL 20 ROW northeast to the Trading Bay Junction Pad. Gravel to support the access road development will be obtained from a proposed material site immediately adjacent to the Trading Bay Junction pad.

##### **3.1.3 Trading Bay Junction**

Trading Bay Junction will be modified by adding pig launching and receiving facilities on the existing CIPL 20. Bypass piping will be installed to allow proper decommissioning of Drift River and the south end of CIPL 20. The existing pad at Trading Bay Junction will be expanded to support the additional pigging facilities (less than an acre) and fencing installed.

##### **3.1.4 CIPL 20 from Trading Bay Junction to GPTF**

The existing CIPL 20 will be hydrotested between Trading Bay Junction and GPTF after modifications are completed at Trading Bay Junction and GPTF.

##### **3.1.5 GPTF**

The existing CIPL 20 at GPTF will be intercepted and rerouted to feed into a new booster pump package. The existing CIPL 20 pig trap will be relocated to near the booster pump site to receive pigs launched at Trading Bay Junction. The existing GPTF facility piping will be modified to route

## **Harvest, Alaska LLC. –Cross Inlet Pipeline Extension Project Project Description**

GPTF oil to the new booster pump package. The booster pump package will consist of a new pump module and a new electrical module and will be located in a developed area at the GPTF facility. The pump package controls will be tied into the existing SCADA system. The pump package will boost the pressure of the oil as needed to flow from GPTF to Tesoro's KPL Tank Farm. A new pig trap will be installed on downstream of the pump package for introducing pigs into the CIPL W 10 pipeline system.

### **3.1.6 CIPL W 10 from GPTF to Kaloa Junction**

A new below grade onshore CIPL W 10 will be installed from GPTF to Kaloa Junction, a length of approximately 3.3 miles. The new CIPL W 10 will parallel the existing CIGGS-W from GPTF to Kaloa Junction and will, to the extent practicable, be installed within the existing pipeline ROW. A fiber optic cable will also be installed with the pipeline for an improved communication and alternative control connection between GPTF and Kaloa Junction.

### **3.1.7 Kaloa Junction**

The piping at Kaloa Junction will be modified to connect the new CIPL W 10 from GPTF to the existing CIGGS-A. The facility piping will include a new automated shutdown valve and a dropout spool that will allow connection of temporary pig traps to the CIPL W 10 from GPTF and CIGGS-A. Normal operation will be for pigs to pass through Kaloa Junction without being trapped. The shutdown valve system will include a module for automated remote valve control. The shutdown valve controls will be tied to the existing SCADA system. No new gravel pads are anticipated. The existing fencing will be expanded to enclose the new facilities.

### **3.1.8 CIGGS-A from Kaloa Junction to East Forelands**

The CIGGS-A will be converted from gas service to oil service, requiring a hydrotest. No other work is anticipated.

### **3.1.9 East Forelands**

The piping at East Forelands will be modified to connect the existing CIGGS-A to the new CIPL E 10 to MGS Facility. The facility piping will include a new automated shutdown valve and a dropout spool that will allow connection of temporary pig traps to the CIGGS-A and the CIPL E 10 to MGS Facility. Normal operation will be for pigs to pass through East Forelands without being trapped. The automated shutdown valve controls will be tied to the existing SCADA system. No new gravel pads or fencing is anticipated.

**Harvest, Alaska LLC. –Cross Inlet Pipeline Extension Project  
Project Description**

**3.1.10 CIPL E 10 from East Forelands to MGS Facility**

A new onshore CIPL E 10 will be installed from East Forelands to MGS Facility, a length of approximately 0.9 miles. The new CIPL E 10 will parallel existing roads from East Forelands to MGS Facility and will, to the extent practicable, be installed within the existing ROWs. Multiple minor road crossings are required.

**3.1.11 MGS Facility**

The piping at MGS Facility will be modified to connect the new CIPL E 10 from East Forelands to the existing Tesoro MGS 12 pipeline. The facility piping will include a new pig trap and pig cooker, shutdown valves, and new leak detection metering that will tie into the existing ATMOS leak detection system. Under normal operation pigs that are launched from GPTF will be received here. No new gravel pads or fencing is anticipated.

**3.1.12 Tesoro MGS 12 Pipeline and KPL Tank Farm**

No modifications to Tesoro's MGS 12 Pipeline or KPL Tank Farm are anticipated. The facilities are currently capable of handling the new oil delivery rates.

**3.2 Gas System**

**3.2.1 KPL Junction**

The piping at KPL Junction will be modified to connect discharge of the gas compressors to the new Tyonek E 10 pipeline. The facility piping will include a new pig trap and new metering. Expansion of the existing gravel pads and fencing is not anticipated.

**3.2.2 Tyonek E 10 from KPL Junction to Halbouty Hill**

A segment of new pipeline approximately 8 miles long will be installed to tie-in KPL Junction to the existing Tyonek E16 at Halbouty Hill.

**3.2.3 Halbouty Hill**

A new pig trap facility will be installed at Halbouty Hill. The facility will include a 10" trap for the Tyonek E 10 pipeline from KPL Junction and a 16" trap for the Tyonek E 16 pipeline from Moose Point. The traps will be in a new fenced site.

**3.2.3 Tyonek E 16 from Halbouty Hill to Moose Point**

The existing Tyonek E 16 will be hydrotested. The existing PSV at Swanson River will be tested and recalibrated to 1035 psig.

**Harvest, Alaska LLC. –Cross Inlet Pipeline Extension Project  
Project Description**

**3.2.3 Moose Point**

Pig traps are currently in place for the Tyonek E 16 and both Tyonek N 10 and S 10 pipelines. Check valves currently installed on the Tyonek N 10 and S 10 pipeline bypasses will be removed. Actuators will be added on existing ball valves on the Tyonek N 10 and S10 bypasses to provide automated shut down capabilities at Moose Point. PSVs on the facility piping will be tested and recalibrated to 1035 psig.

**3.2.4 Tyonek N 10 and S 10 from Moose Point to Tyonek Platform**

There are two existing from Moose Point to Tyonek Platform, designated Tyonek N 10 and Tyonek S 10. The pipelines will be inspected and, if needed, have external repair sleeves installed along the subsea portions to meet the new pressure requirements. The pipelines will also be hydrotested.

**3.2.5 Tyonek Platform**

The existing Tyonek N 10 and S 10 pipelines terminate on the Tyonek Platform. Modifications will be made to the piping on the sea floor near the base of the platform to join them together using a subsea wye. A second subsea wye will be installed to connect the combined Tyonek N 10 and S 10 pipeline to the existing Tyonek N 10 riser and the new Tyonek W 10 pipeline that continues west across the inlet. On the platform, the facility piping will be connected together to combine all gas flow into the Tyonek N 10 riser. A new flow control valve will be added to the facility piping to control gas pressure and flow rate off the Tyonek Platform. The compression system controls will be modified for integration into the overall system gas compression management.

**3.2.6 Tyonek W 10 from Tyonek Platform to BPL Junction**

The new Tyonek W 10 Pipeline will allow gas from the Tyonek Platform and KPL Junction to enter the BPL segment of the KBPL system in a parallel path with the CIGGS-B line at Kaloa. The new pipeline will be approximately 7.5 miles long and transition onshore at Ladd Landing.

**3.2.7 BPL Junction**

BPL Junction is the connection of the new Tyonek W 10 to the existing BPL 16 segment of the KBPL. A new fenced area will include the branch connection, automated shutdown valve, flow meter, communication tower, and module for valve control. A pig receiver will also be installed. The shutdown valve controls will be tied to the existing SCADA system.

**Harvest, Alaska LLC. –Cross Inlet Pipeline Extension Project  
Project Description**

**4.0 Proposed Construction Methods**

**4.1 West Cook Inlet Onshore Pipeline Installation**

The method for onshore pipeline installation will be open cut, or trench excavation followed by direct bury of the pipeline. Installation will occur simultaneously for both the CIPL W 10 from the GPTF to Kaloa Junction and the Tyonek W 10 from the BPL Junction to Ladd Landing. To allow a sufficient work area, a 1,000-ft wide construction ROW will be requested along the length of the pipelines. The construction ROW will typically be significantly wider (up to 1,000-ft wide) where additional area is needed to support larger construction laydown areas and narrower than 1,000 ft in other areas. The existing BPL segment of the KBPL will be located and a trench will be dug parallel to the BPL segment, allowing approximately 25 ft separation between pipelines. The new pipeline will be installed at a depth of 4 to 5 ft below grade. Upon completion of installation activities, the operational ROW will be determined. This ROW is expected to be approximately 100 ft wide, but will vary depending upon the location of the existing BPL segment within its ROW.

Onshore pipeline installation will take place during winter when frozen conditions exist to minimize impacts from construction activity. If the ground is not frozen, construction methods that minimize impacts, including rollagons, rig mats, tracked vehicles, and dewatering will be used for material and equipment movement.

Where necessary, the construction ROW will be cleared of brush. The BPL segment of the KBPL's ROW was cleared within the last 8 years, minimizing the amount of clearing that will be required for the CIPL W 10. The vegetative mat will be removed and set aside, the trench excavated, and pipeline placed in the trench. Spoils from trenching will be used to backfill the trench, and the vegetative mat will be replaced on top of the trench. Additional gravel will not be required for pipeline installation. Pipe bedding is not expected to be required and will not be used unless required by the subsurface conditions.

**4.2 Pipeline Installation in the Transition Zone**

The offshore and transition zone pipeline installation will be via pulling as described below. Upon completion of pulling, the Tyonek W 10 Pipeline in the tidal transition zone will be on the ground and exposed. The proposed method for pipeline burial in the transition zone is by trenching adjacent to the pipeline using the open cut method, followed by direct burial of the pipeline to a depth of 4 to 5 ft. Trenching in the tidal transition zone will take place during low tides to allow shore-based excavators maximum distance into the tidal zone. A backhoe

## **Harvest, Alaska LLC. –Cross Inlet Pipeline Extension Project Project Description**

mounted on a landing craft will be used to trench and bury the pipeline in areas beyond the low tide area that cannot be reached by the shore-based excavators. Upon completion of installation activities, the operational ROW will be determined. The ROW is expected to be approximately 100 ft wide.

The transition zone (including beach and tidal areas) and offshore portions of the pipeline between Ladd Landing and Tyonek Platform will be constructed in approximately 1-mile long sections onshore near Ladd Landing. Pipeline sections will be inspected, hydrotested, and coatings verified prior to pulling. Additional pipe sections will be welded together, section splice welds inspected, and coatings applied to welds on the beach.

### **4.3 Offshore Pipeline Installations – Ladd Landing to Tyonek Platform**

The installation of the Tyonek W 10 Pipeline from Ladd Landing to the Tyonek Platform will involve pulling the pipeline from Ladd Landing to the Tyonek Platform. The proposed method of construction is to fabricate the pipeline in segments on shore near Ladd Landing, then pull the pipeline from shore to the Tyonek Platform using a winch mounted on a pull barge assisted by a tug.

Pipeline installation will occur in approximately 1-mile long pipeline sections which will be constructed onshore at Ladd Landing. The pulling set-up would include a winch and block system mounted on a pull barge and a winch mounted on the shore. The winch on shore would maintain alignment of the pipeline during pulling and the winch on the pull barge would pull the pipeline from shore out to the platform. A dive boat will be used to pull the tag line to the main winch line. Once a section has been pulled offshore, a new section will be welded to the end of the partially installed pipeline at the beach. Then the connected sections will be pulled to the platform together. Additional sections will be added to the shore end of the partially installed/pulled pipeline until the full 5.5 miles of pipeline have been pulled to the platform. Pipeline sections will be inspected, hydrotested, and coatings verified prior to pulling into place. Additional pipe sections will be welded together, section splice welds inspected, and coatings applied to welds on the beach.

The pipeline will be pulled into position mainly during slack tide to minimize cross currents and potential for loss of control of the pipeline. Tugs, other boats and/or the shore mounted winch will be used intermittently for pipeline positioning, or to relocate the pipeline in the event of impedance. A sonar boat will be used to confirm that the pipe is being installed in the correct position and location.

**Harvest, Alaska LLC. –Cross Inlet Pipeline Extension Project  
Project Description**

Once the pipeline is in place, a dive boat will be used to install sand bags along the pipelines for anchoring as needed. Upon completion of anchoring activities, the dive boat will be used to install cathodic protection (anode sleds) along the pipelines. Additional sonar surveys will be completed after installation to confirm that pipeline placement is correct.

**4.4 Offshore Pipeline Repairs – Tyonek Platform to East Cook Inlet**

Subsea repairs of the existing pipeline between Moose Point Pad and the Tyonek Platform may be required. Repair operations would be supported by a dive boat and dive crew and would take approximately 3 days at each location. Work is anticipated to be completed in about 51 days.

**4.5 Connection at the Tyonek Platform**

The subsea pipeline will be connected to a new riser at the Tyonek Platform by new subsea wyes and tie-in spool connections. The connections would be fabricated onshore, transported to the platform, and lowered to the seafloor. A dive boat will facilitate the connection from the new pipeline to the base of the new gas riser.

**4.6 East Cook Inlet Onshore Pipeline Installation**

The method for east side onshore pipeline installation will be the same general technique used for onshore pipeline installation on the west side of Cook Inlet. It will be open cut, or trench excavation, followed by direct bury of the pipeline. To allow a sufficient work area, a 500-ft wide construction ROW will be requested along the length of the new pipeline segment. The existing Tyonek 16 will be located and a trench will be dug parallel to it, allowing approximately 25 ft separation between pipelines. The new pipeline will be installed at a depth of 4 to 5 ft below grade. Upon completion of installation activities, the operational ROW will be determined. This ROW is expected to be approximately 100 ft wide.

Pipeline installation will take place during spring and summer. The east side pipeline ROW is dry typically dry and does not require winter installation like on the west side of cook inlet. If the ground is not firm in some areas, construction methods that minimize impacts, including rollagons, rig mats, tracked vehicles, and dewatering will be used for material and equipment movement.

Where necessary, the construction ROW will be cleared of brush. The vegetative mat will be removed and set aside, the trench excavated, and pipeline placed in the trench. Spoils from trenching will be used to backfill the trench, and the vegetative mat will be replaced on top of the trench. Additional gravel will not be

## **Harvest, Alaska LLC. –Cross Inlet Pipeline Extension Project Project Description**

required for pipeline installation. Pipe bedding is not expected to be required and will not be used unless required by the subsurface conditions.

### **5.0 Logistics and Support Facilities**

Equipment and personnel will be mobilized from Anchorage and the Kenai Peninsula to various project locations by barges and trucks. Barge landings that may be used include:

- GPTF
- Freemans Landing
- Ladd Landing
- Tyonek Barge Landing and Dock
- OSK Dock

Each of the barge landing sites has road access allowing materials to be mobilized to laydown yards and the construction ROW. Some of these access roads may require improvements prior to use.

Helicopters may be used for crew or material transport to remote locations (e.g. Tyonek Platform, West side pipeline ROW) and to transport some equipment via sling load.

Staging areas, laydown yards and work pads on the west side of Cook Inlet include:

- Near Ladd Landing
- Near Kaloa Junction
- South of the GPTF facility near the runway

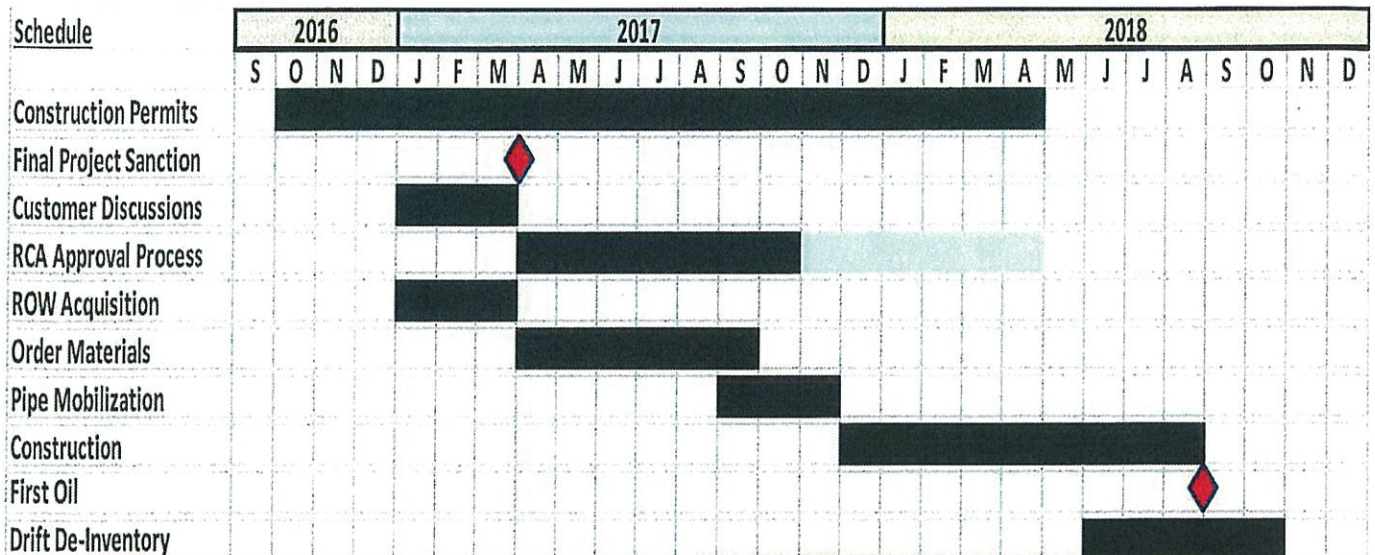
On the east side of Cook Inlet, they include:

- OSK Dock
- A potential staging area near KPL Junction by the Arctic Slope Regional Corporation fabrication facility
- A potential staging area at Tesoro overflow parking lot north of the Tesoro Refinery.

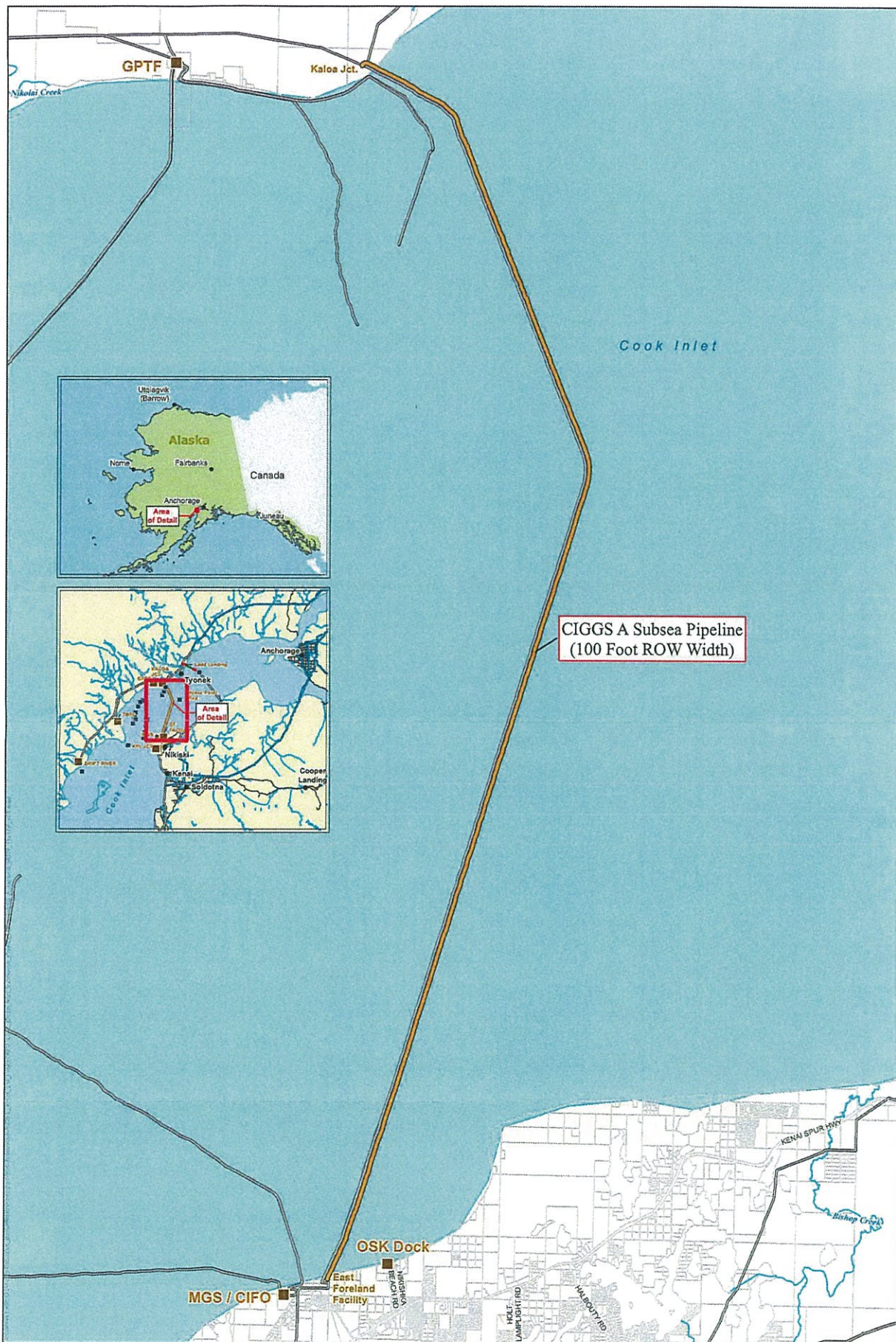
Personnel will be housed on the West side in existing housing located at Beluga, GPTF, Tyonek, Shirleyville, and TBPF. Temporary camps are not proposed at this time. East side housing will take advantage of existing available commercial lodging.

# Harvest, Alaska LLC. –Cross Inlet Pipeline Extension Project Project Description

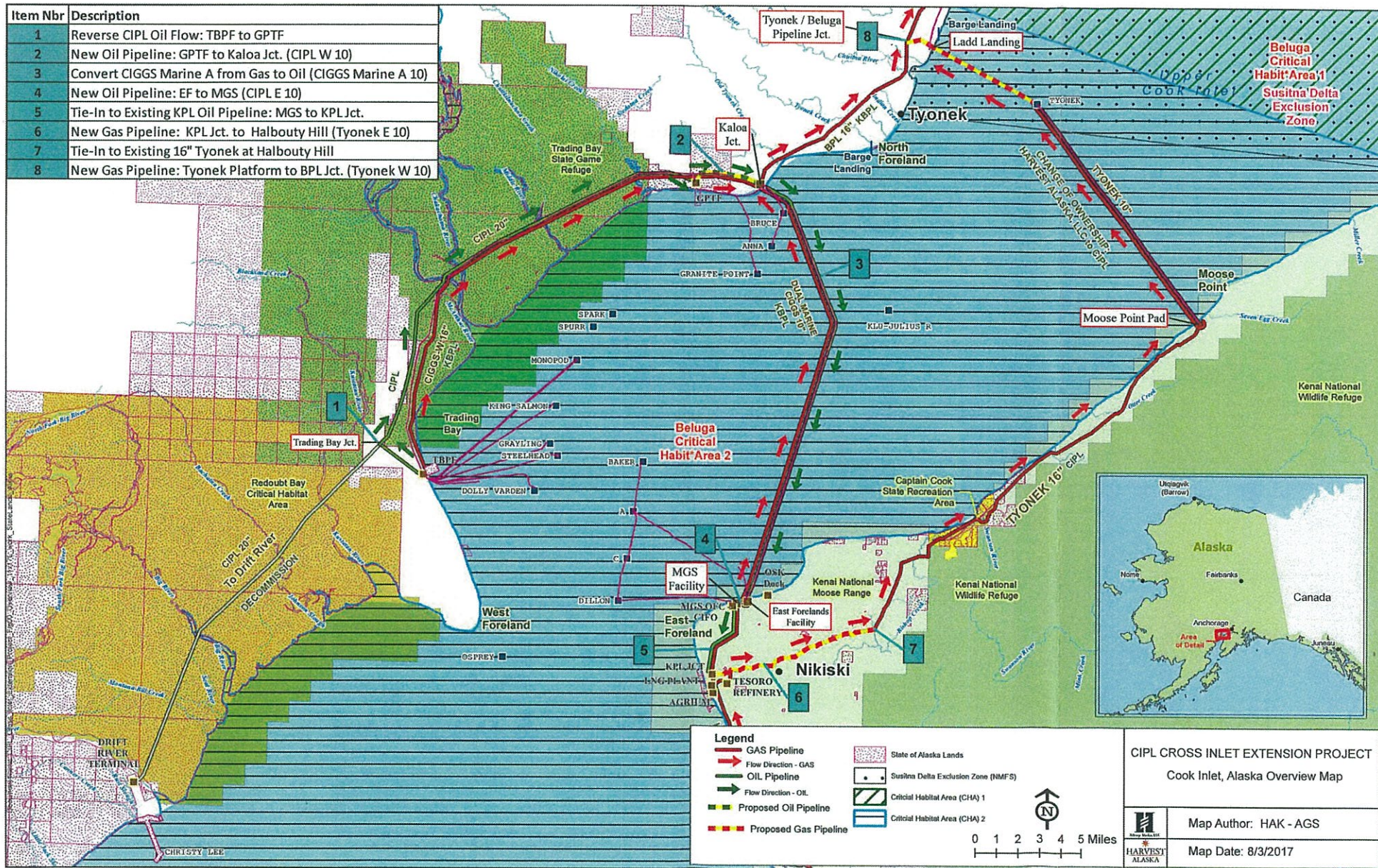
## 6.0 Proposed Schedule



Activity	Dates	Time to Complete
Material transportation to staging areas	July 2017 through November 2018	
Gravel pads installation or expansion	July 2017 through August 2018	
New onshore CIPL W 10. and Tyonek W 10 installation	December 2017 to August 2018	
New offshore Tyonek W 10 Pipeline installation	Spring 2018 after the ice is out of the Inlet.	One month for proposed method; two months for contingency method
Transition zone pipeline installation	Spring 2018 after the ice is out of the Inlet.	Two weeks for proposed method; one week for contingency method
Offshore Tyonek E 10 Pipeline repair	Spring 2018 after the ice is out of the Inlet.	Two months
Offshore pipeline anchoring	After offshore installation	14 weeks
Cathodic protection installation		Two weeks
Sonar surveys		Throughout project
Offshore pipeline connections to Tyonek Platform	After anchoring/cathodic protection installation	Four weeks
Removal of all materials	December 2018	



Item Nbr	Description
1	Reverse CIPL Oil Flow: TBPJ to GPTF
2	New Oil Pipeline: GPTF to Kaloa Jct. (CIPL W 10)
3	Convert CIGGS Marine A from Gas to Oil (CIGGS Marine A 10)
4	New Oil Pipeline: EF to MGS (CIPL E 10)
5	Tie-In to Existing KPL Oil Pipeline: MGS to KPL Jct.
6	New Gas Pipeline: KPL Jct. to Halbouty Hill (Tyonek E 10)
7	Tie-In to Existing 16" Tyonek at Halbouty Hill
8	New Gas Pipeline: Tyonek Platform to BPL Jct. (Tyonek W 10)



Item Nbr	Description
1	Reverse CIPL Oil Flow: TBPF to GPTF
2	New Oil Pipeline: GPTF to Kaloa Jct. (CIPL W 10)
3	Convert CIGGS Marine A from Gas to Oil (CIGGS Marine A 10)
4	New Oil Pipeline: EF to MGS (CIPL E 10)
5	Tie-In to Existing KPL Oil Pipeline: MGS to KPL Jct.
6	New Gas Pipeline: KPL Jct. to Halbouty Hill (Tyonek E 10)
7	Tie-In to Existing 16" Tyonek at Halbouty Hill
8	New Gas Pipeline: Tyonek Platform to BPL Jct. (Tyonek W 10)

