

**U.S. DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
FINAL ENVIRONMENTAL ASSESSMENT
and
FINDING OF NO SIGNIFICANT IMPACT**

Special Permit Information:

Docket Number: PHMSA-2017-0091
Requested by: Hilcorp Alaska, LLC
Date Requested: March 24, 2017
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Effective Dates: April 29, 2019 to April 29, 2029
Code Section(s): 49 CFR 195.563 and 195.573

I. Background

The Pipeline and Hazardous Materials Safety Administration (PHMSA) noticed on October 15, 2018, in the Federal Register (83 FR 52050) a special permit request by Hilcorp Alaska, LLC (Hilcorp), owner and operator of the Liberty Sales Oil Pipeline (Liberty Pipeline). The Liberty Pipeline is approximately 7.2 miles of 12.75-inch diameter pipeline that is jurisdictional to 49 Code of Federal Regulations (CFR) Part 195. The Liberty Pipeline special permit will waive compliance with 49 CFR 195.563 and 195.573.

This Final Environmental Assessment (FEA) describes Hilcorp's request including the location of the pipeline, operational review, any effect to safety and the environment, and the special permit conditions.

In accordance with the Department of Transportation's (DOT) Order 5610.1C, the National Environmental Policy Act (NEPA), 42 United States Code (U.S.C.), 4321–4375, and the Council on Environmental Quality regulations, 40 CFR 1500-1508, the processing of a special permit application involves the preparation of an FEA. NEPA requires that agencies analyze

a proposed action to determine whether the action will have a significant impact on the human environment.

As required by 49 CFR 190.341, PHMSA analyzes special permit requests for potential risks to public safety and the environment that could result from our decision to grant or deny the request. As part of this analysis, PHMSA looks at whether a special permit would impact the likelihood and consequences of a pipeline failure as compared with a pipeline that operates in full compliance with the pipeline safety regulations. PHMSA may grant the special permit request, grant the request with additional conditions, or deny the request.

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Table of Acronyms

°F	degrees Fahrenheit
3LPE	three-layer polyethylene
AOGCC	Alaska Oil and Gas Conservation Commission
API	American Petroleum Institute
ARO	abrasion resistant overcoat
BOEM	Bureau of Ocean Energy Management
BOPD	barrels of oil per day
CFR	Code of Federal Regulations
CP	cathodic protection
CPM	computational pipeline monitoring (CPM)
CVN	Charpy-V-Notch
DIA	diameter
DOT	U. S. Department of Transportation
EIS	Environmental Impact Statement
FBE	fusion bonded epoxy
FEA	Final Environmental Assessment
FR	Federal Register
FEIS	Final Environmental Impact Statement
HCA	High Consequence Area
Hilcorp	Hilcorp Alaska, LLC
HR	high resolution
ILI	in-line inspection
Liberty Pipeline	Liberty Sales Oil Pipeline
MOP	maximum operating pressure
MP	milepost
NACE	National Association of Corrosion Engineers
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NPS	nominal pipe size
NMFS	National Marine Fisheries Service
OCS	Outer Continental Shelf
O&M	Operations & Maintenance
PHMSA	Pipeline and Hazardous Materials Safety Administration
PIP	pipe-in-pipe
PSA	Pipeline Safety, Regulatory Certainty and Job Creation Act
psig	pounds per square inch gauge
SCADA	supervisory control and data acquisition
SPCS	State Pipeline Coordinator's Section
TWS	The Wilderness Society
U.S.	United States

USFWS	United States Fish and Wildlife
UT	ultrasonic technology
VSM	vertical support member
WT	wall thickness

1. Introduction

The following final environmental assessment (FEA) considers the Hilcorp Alaska, LLC (Hilcorp) application for a special permit, in accordance with 49 CFR 190.341(c)(8) for the Liberty Development and Production Plan (Liberty DPP). The special permit is one of a number of Federal and State of Alaska permits and approvals that Hilcorp is seeking in connection with development of the Liberty Oil Field, located off Alaska's North Slope, on the Outer Continental Shelf (OCS). The Liberty Pipeline special permit waives compliance with PHMSA regulations 49 CFR 195.563 and 195.573.

The Bureau of Ocean Energy Management (BOEM) is the lead federal agency conducting the environmental reviews for the Liberty DPP. The National Marine Fisheries Service (NMFS) and the United States Fish and Wildlife (USFWS) issued biological opinions to BOEM for the Liberty DPP on July 31, 2018 and July 13, 2018, respectively. On August 31, 2018, BOEM published a Notice of Availability in the Federal Register for the Final Environmental Impact Statement (FEIS) for the construction of Liberty Drilling and Production Island and the siting of the Liberty Pipeline. BOEM announced the availability of the Record of Decision for the FEIS for the Liberty DPP in the Beaufort Sea Planning Area in the Federal Register (83FR54136) on October 26, 2018, at <https://www.federalregister.gov/documents/2018/10/26/2018-23366/environmental-impact-statement-on-the-liberty-development-and-production-plan-in-the-beaufort-sea>.

The Record of Decision identifies the BOEM's selected alternative for the Liberty DPP. The Record of Decision and associated information are available on BOEM's website at <https://www.boem.gov/liberty/>.

This FEA considered only the pipeline design, construction, operation, and maintenance of the Liberty Pipeline, which is jurisdictional to PHMSA. To avoid duplication, PHMSA references information and analysis in BOEM's FEIS where appropriate.

The FEA evaluates the waiver through a special permit of cathodic protection (CP) requirements for the inner/carrier sales oil pipe, allowing the use of a Pipe-In-Pipe (PIP) system. The potential environmental impact of the Liberty project as a whole is addressed in the FEIS. This FEA

analyzes environmental and safety risks of the waiver of CP requirements for the carrier pipe and has conditions intended to ensure the integrity of the Liberty Pipeline so that it is at least as equivalent in safety as full compliance with the Federal Pipeline Safety Regulations.

2. Background

Hilcorp is proposing to construct the Liberty Development, a self-contained offshore drilling and production facility located on an artificial gravel island with a pipeline to shore. Hilcorp proposes to build Liberty Island about 5 miles offshore in Foggy Island Bay off the Beaufort Sea OCS in approximately 19 feet of water; about 2 miles west of the Tern Island shoal (see **Figure 1**).

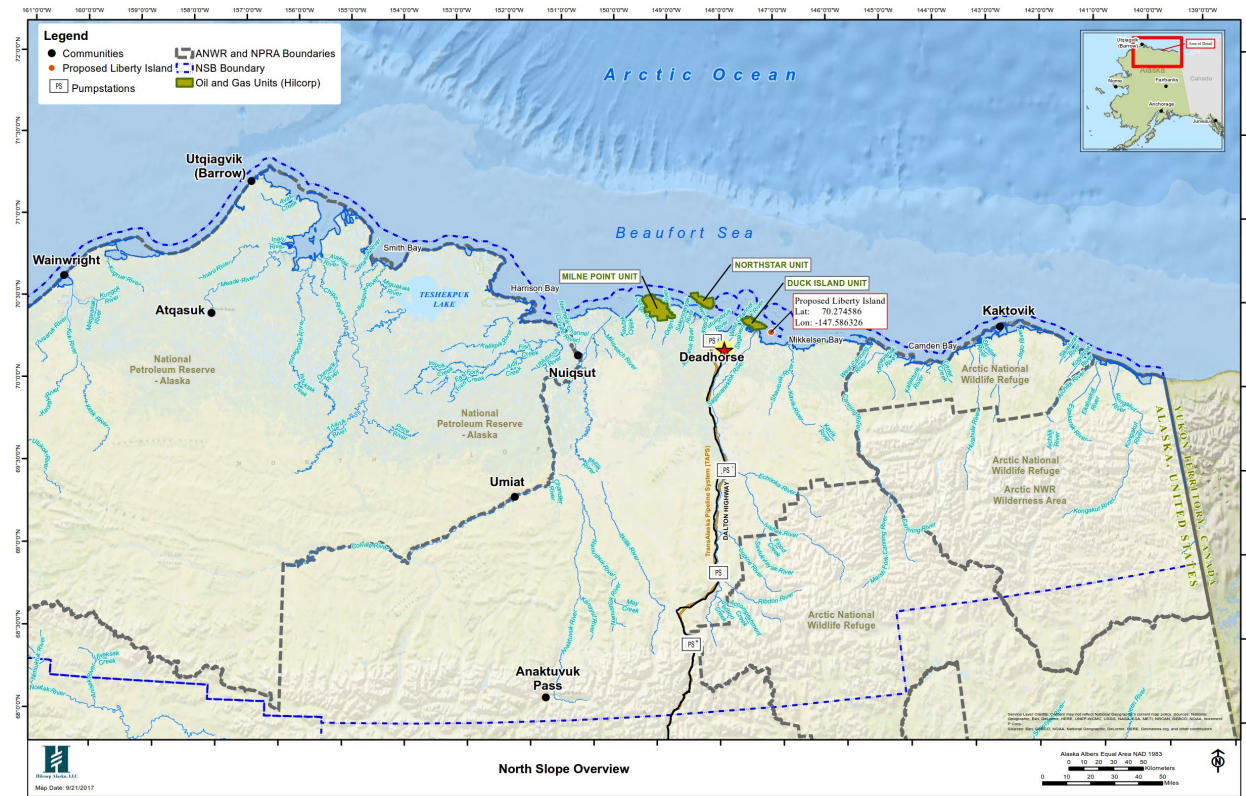


Figure 1 – Liberty Area Overview Map

Infrastructure and facilities necessary to drill wells and process and export up to 70,000 barrels of oil per day (BOPD) to shore will be installed on the island. Sales-quality crude oil will be exported from the island through a subsea 12.75-inch diameter x 16-inch diameter PIP system

that is bundled to a 4.5-inch diameter coiled utility line, along with an armored fiber optic cable (see **Figure 2**). The utility line will be installed as a contingency for possible future use as a fuel gas delivery line or to allow for a circulation loop with the 12.75-inch diameter sales oil line for upset conditions. The utility line will be fully subject to 49 CFR Parts 192 and/or 195 depending on the product ultimately transported by the utility line. The utility line’s compliance with 49 CFR Part 192 or 195 will be determined prior to commencement of operation.

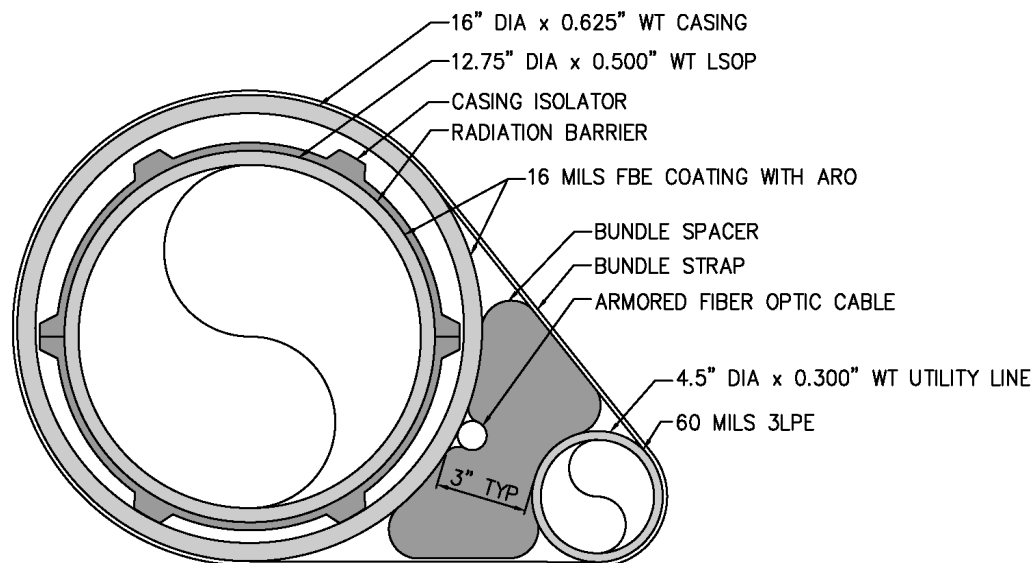


Figure 2: Pipeline Bundle Cross Section; (12.75-inch x 16-inch PIP & Bundled 4.5-inch Coiled Utility Line)

The Liberty Pipeline bundle will originate on the Liberty Island in the OCS, and will extend south into State of Alaska waters, to a shore crossing approximately 5.68 miles from the island located west of the Kadleroshilik River Delta. At the shore, the pipe will transition to a single-wall, aboveground pipeline supported on vertical support members (VSMs) for 1.5 miles, and continue south to tie into the existing Badami pipeline. Liberty sales oil will be transported through the Badami and Endicott pipelines to the Trans Alaska Pipeline System. The Liberty Pipeline *special permit segment* includes approximately 5.68 miles of 12.75-inch carrier pipeline installed within a 16-inch casing pipeline, the 16-inch casing pipeline, the annular space between the two (2) pipelines, the two (2) casing to carrier pipe “bulkhead” connections located on each end of the PIP segment, and the connecting 12.75-inch carrier pipeline from the 16-inch casing

pipe to the in-line inspection (ILI) tool launcher and receiver from approximate Milepost (MP) 0.02 and MP 7.25.¹

The special permit PIP segment will be located on the OCS of the U.S. Arctic Ocean in the Alaskan Beaufort Sea (see **Figure 3**) and in the state waters within 3 miles of the coastline. The pipeline will be installed in an area that includes a seasonal appearance of a federally listed threatened and/or endangered species; therefore, it will be defined as an unusually sensitive area under 49 CFR 195.452.

The Liberty Pipeline offshore design approach will be the fourth subsea pipeline installed in the Alaskan Beaufort Sea (Northstar, Oooguruk, and Nikaitchuq). The Liberty Pipeline will be the 3rd pipeline in the Beaufort Sea that utilizes a PIP design for the crude oil carrier pipe. However, the two existing PIP pipelines (Oooguruk and Nikaitchuq) are not regulated by PHMSA since these pipelines are carrying non processed crude oil and were deemed to be a production flowline outside of PHMSA’s jurisdiction. Northstar is regulated by PHMSA since the crude oil is processed prior to transportation and uses a conventional single wall pipe design compliant with existing Federal Pipeline Safety Regulations.

¹ The “Liberty Pipeline” refers to the entire approximately 7.25 miles of pipeline and supporting facilities that are jurisdictional to 49 CFR Part 195.

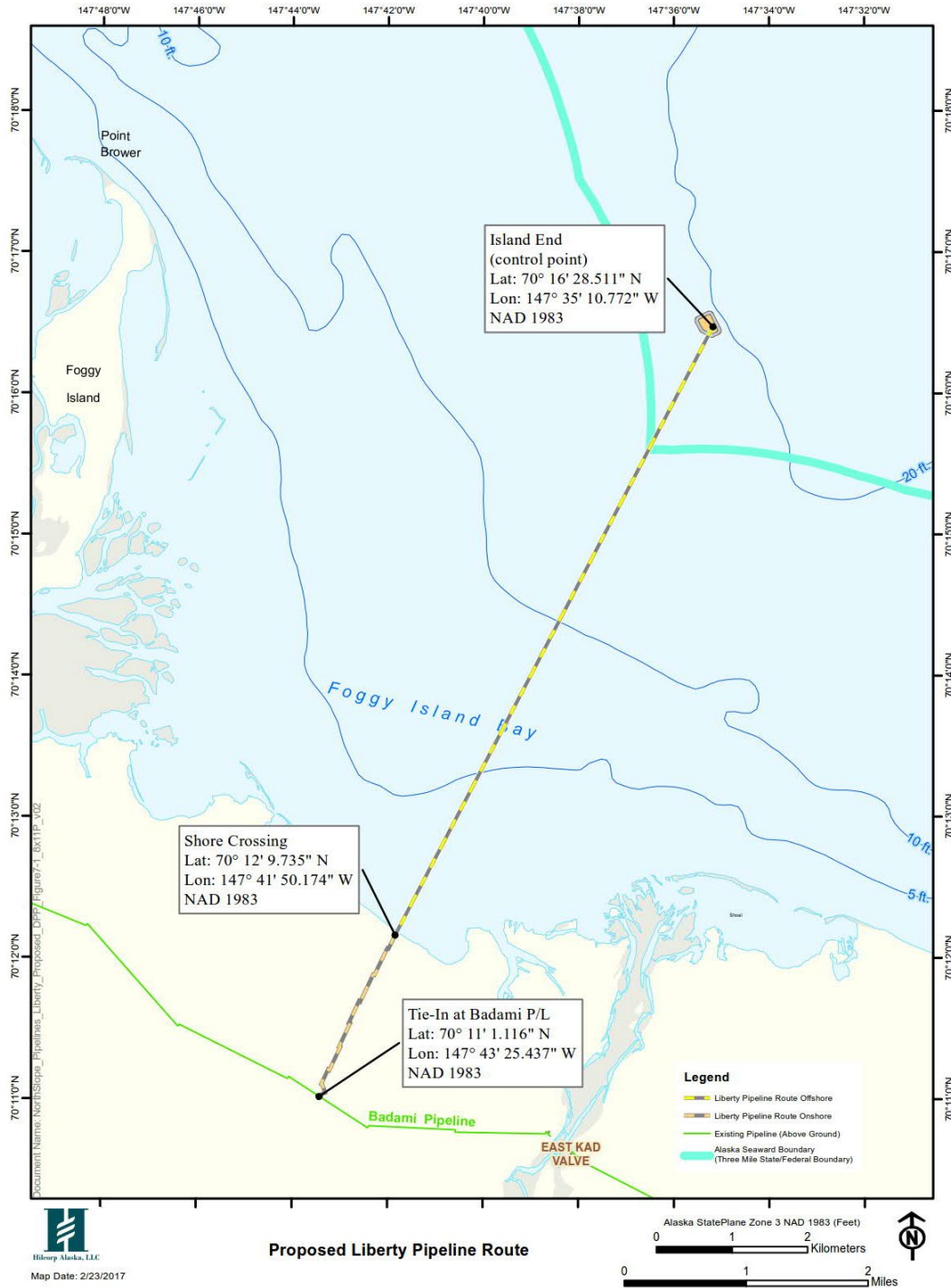


Figure 3 – Overview of Special Permit (Offshore) Segment

3. Purpose and Need

Hilcorp’s request for a special permit is for its planned Liberty Pipeline and waiving compliance from the following corrosion control related sections of the Federal Pipeline Safety Regulations:

- 1) 49 CFR 195.563, Which pipelines must have cathodic protection?
- 2) 49 CFR 195.573, What must I do to monitor external corrosion control?

This Action will require the issuance of a special permit to allow Hilcorp to construct the subsea PIP system without applying CP to the inner sales oil pipeline as required by 49 CFR 195.563 and 195.573. The Federal Pipeline Safety Regulations require hazardous liquid pipeline operators to have CP to prevent external corrosion and to monitor external CP levels over the entire length of the pipeline. The purpose of the special permit is to waive the specified regulations while imposing additional special permit conditions to assure safety and environmental protection.

Specifically, the special permit conditions address the possible introduction of an electrolyte, such as water or oxygen, around the carrier pipe or a metallic short in the carrier pipe, which would create an environment that allows corrosion to occur. Further, the special permit conditions provide a means for assessing the condition of the carrier pipe to ensure its integrity is maintained if the PIP system is compromised. Finally, the conditions are necessary to allow Hilcorp to safely operate the special permit segment at a maximum operating pressure (MOP) of 1,480 pounds per square inch gauge (psig) and a maximum operating temperature of 150 degrees Fahrenheit (°F).

Hilcorp seeks a special permit to operate the inner, sales oil, or carrier pipe without CP. The special permit will waive the requirements of 49 CFR 195.563(a) and 195.573. These sections state in part: “Each buried or submerged pipeline that is constructed, relocated, replaced, or otherwise changed after applicable date in 49 CFR 195.401(c) must have cathodic protection.”

CP is a method to limit corrosion by minimizing the difference in electrical potential between an anode and a cathode. This is achieved by applying a current to the pipeline, ideally resulting in a single potential for the entire pipeline, thereby eliminating potential differences on the pipe.

The PIP configuration makes it impractical to install or monitor a CP system on the inner pipe primarily due to the limited annular space between the inner and outer pipes, and due to the fact that the annulus will be sealed at each end to provide an airtight environment. If properly dried prior to operations startup and successfully maintained, the inner pipe will not be exposed to an electrolyte such as seawater, soil, oxygen, or water vapor. The National Association of

Corrosion Engineers (NACE) defines corrosion as “the deterioration of a material, usually metal, which results from the reaction with its environment.” (NACE SP0169-2007 at page 2.) Even if it were practical to apply CP to the inner pipe, the protection would serve no purpose in the absence of an electrolyte.

The special permit will allow Hilcorp to use a PIP system along with implementing the special permit conditions, which are designed to prevent the entry of moisture into the casing and detect its presence in the event that these measures are not effective. A PIP system also provides protection from external forces, secondary containment in the event of a release from the sales oil pipeline, and additional methods for detecting leaks if a spill were to occur. Nonetheless, the purpose of the special permit is to impose enforceable safety conditions to ensure the integrity of the casing pipe and annulus, so that the inner carrier pipeline is protected to an equal or greater extent as a pipeline that operates with CP in accordance with 49 CFR 195.563(a).

Hilcorp and its partners have conducted dozens of project meetings with potentially affected stakeholders. Project stakeholders have expressed a strong preference for a double-walled PIP design for the subsea pipeline because of the added protection from external hazards and environmental and safety benefits that this design will provide. The report “*An Engineering Assessment of Double Wall Versus Single Wall Designs for Offshore Pipelines in an Arctic Environment*” (C-CORE 2000) provides empirical support for the safety, leak detection and environmental benefits of a PIP design. As relevant to Hilcorp’s PIP design, the C-CORE 2000 report provides, in part:

The annulus can be charged with gas at a pressure that is distinctly different from both the operating pressure of the inner pipe and the ambient pressure of the water over the pipeline, or left as a vacuum. Redundant pressure monitors on the annulus, integrated into a SCADA system, will provide reliable continuous leak detection monitoring of both inner and outer pipes. (C-CORE 2000 at page 7-50.)

Hilcorp’s planned PIP design uses a heavy wall (0.500-inch wall thickness) inner carrier pipe and heavy wall (0.625-inch wall thickness) outer casing pipe to provide superior protection from failures caused by external forces. In the unlikely event of an inner pipe failure, a combination of the outer casing pipe, monitoring of the PIP annulus, and external

storage capacity allows for detection of such a failure and containment of a release of oil from the inner pipe. In the unlikely event of a rupture of the carrier pipe, the outer casing pipe will protect against the release of oil into the environment because the annulus will be equipped with continuous pressure monitoring and a relief valve tied into external storage. Therefore, if a leak were to occur in the carrier pipe, pressures inside of the PIP/annulus would not cause the 16-inch diameter casing to leak or rupture.

In addition, the report states:

At low annulus pressure, the hoop stress on the outer pipe will be minimal. In the absence of hoop stress, a pipe can tolerate greater axial stress and bending stress. By virtue of the resistance to heat transfer provided by the annulus, the outer pipe in a double walled system would normally be subjected to a lower thermal stress. Further, for pipes all having the same diameter to wall thickness (D/t) ratio, the double walled pipeline system would be flexurally stiffer when exposed to large soil displacements of the type that could be caused by thaw settlement or ice scour. Its increased section modulus would yield a stiffer pipe and generally result in lower bending strain for any given soil displacement field. (C-CORE 2000 at page 7-9.)

Hilcorp's PIP design is intended to provide thermal insulation to reduce the likelihood of thaw settlement of surrounding soils, to reduce longitudinal stresses on the PIP bundle.

With respect to the project overall and the construction of the Liberty Pipeline, Hilcorp contends that the Liberty project will benefit the public by producing additional oil reserves and growing the economy by adding jobs and increased tax revenue to federal, state, and local budgets. As the Liberty Unit Operator, Hilcorp is planning to initiate commercial hydrocarbon production of the Liberty Reservoir by the calendar year 2023. U.S. Energy Policy encourages and facilitates domestic oil production. Developing the oil resources of Liberty Unit leases OCS Y-1585, Y-1650, and OCS T-1886 will also help satisfy mandates of the OCS Lands Act to explore for and develop offshore mineral resources.

4. Site Description

Agricultural Resources:

Agriculture is not practiced in this area due to the climate. However, subsistence activities are described in Section 3.3 of the Liberty FEIS.

Water Resources:

A description of Environmental Resources is available in Chapter 3 of the Liberty FEIS (<https://www.boem.gov/Vol-1-Liberty-FEIS/>). See especially Section 3.1.2. Oceanography and Section 3.1.4. Water Quality

Air Quality:

Air quality is described in Chapter 4.2.3 of the Liberty FEIS (<https://www.boem.gov/Vol-1-Liberty-FEIS/>).

Biological Resources:

A description of Environmental Resources is available in Sections 3.1 and 3.2 of the Liberty FEIS (<https://www.boem.gov/Vol-1-Liberty-FEIS/>).

Archaeological Resources:

A description of archaeological resources is available in Section 3.3.6 of the Liberty FEIS (<https://www.boem.gov/Vol-1-Liberty-FEIS/>).

Environmental Justice:

A description of Environmental Resources is available in Section 3.3.5 of the Liberty FEIS (<https://www.boem.gov/Vol-1-Liberty-FEIS/>).

Geology, Soils, and Mineral Resources:

A description of Oceanography and Geology is available in Sections 3.1.2 and 3.1.3 of the Liberty FEIS (<https://www.boem.gov/Vol-1-Liberty-FEIS/>).

Sociocultural Systems:

A description of Sociocultural Systems, including sub-descriptions of Economy, Subsistence Activities and Harvest Patterns, and Community Health are available in the Liberty DEIS in Sections 3.3.1 to 3.3.4 (<https://www.boem.gov/Vol-1-Liberty-FEIS/>).

5. Final Action and Alternatives

5.1 Alternative 1: No Action Alternative

Under this alternative, PHMSA would deny Hilcorp's request for a special permit for 49 CFR 195.563 and 195.573.

Should PHMSA deny the request for a special permit, Hilcorp could construct a sales oil pipeline that complies with 49 CFR Part 195, including a single-walled pipeline with complete coverage of CP. In consideration of this alternative, Hilcorp has identified project advantages and disadvantages:

ADVANTAGES of No Action Alternative:

- **Simplified Installation, Design, Monitoring, and Maintenance** – A single-walled design with full CP coverage would not require the additional construction steps such as wrapping a thermal radiation barrier, installing the casing isolators, fabrication of the 16-inch diameter casing piping, inserting the pipeline into the casing, drying, preparing, and sealing the annulus, and installing the additional annulus hardware.
- **Reduced Project Cost** – A 49 CFR Part 195-compliant design could reduce the time and cost for materials, bundle assembly and installation, and potentially reduce the required trench width.²
- **CP** – A single-walled pipeline that fully complies with 49 CFR Part 195 would allow for the use of a conventional, impressed current cathodic protection that could be monitored along its entire length. CP is a simple and reliable way to prevent or significantly reduce external corrosion on a pipeline. The cased pipeline precludes the use of an impressed CP on the 12.75-inch diameter carrier/sales oil pipe, and corrosion control will be provided via a sealed annulus filled with inert gas and a casing pipe to protect the inner pipe. The increased complexity of the project design requires specialized monitoring to ensure proper functionality of the annulus. Further, repair of such a complicated design requires more time in both planning and executing.

² While PHMSA has not conducted a cost comparison of a PIP design compared to a strain based design, Hilcorp contends that the PIP design is more expensive.

DISADVANTAGES of the No Action Alternative:

- **Increased thermal exposure to the permafrost** – The single wall pipeline would not have the benefit of a thermal barrier between the sales oil pipeline and the surrounding environment.
- **Potential for increased strain due to thermal exposure** – Thermal exposure would cause surrounding ice-rich soils to thaw more quickly, ultimately causing settlement of the soil layers, also defined as thaw settlement. The overall thaw settlement potential and thermal exposure to the environment would be much higher than with a PIP design. The increased thaw settlement would potentially cause the pipeline to experience stresses greater than allowable by 49 CFR Part 195. Therefore, the sales oil pipeline would likely require the use of a strain based design without the additional structural support and thermal protection provided by the casing pipe.

A strain-based design approach is feasible, but would require greater consideration of interrelated design aspects, including strain demand, design methods, material selection, strain capacity validation, and increase construction and operation requirements.

Development of a strain-based design package at this stage would lead to significant project delays, and would frustrate the many government and public stakeholders who have already expressed a clear preference for a PIP design.

- **Lack of secondary containment** – A single wall pipeline system would not have the additional environmental protection provided by a PIP system. While it is possible for both inner and outer pipelines to fail, increased protection to the environment is provided by the extra layer of containment (the casing), external storage, additional coating on the casing, and additional monitoring methods for leaks. The report “*An Engineering Assessment of Double Wall Versus Single Wall Designs for Offshore Pipelines in an Arctic Environment*” (C-CORE 2000) states “The double wall has an advantage over a single wall pipeline in that it has secondary containment provided by the outer pipe.”

5.2 Alternative 2: Special Permit Action

The selected action will require the issuance of a special permit to allow Hilcorp to construct the subsea PIP system without applying CP to the inner sales oil pipeline as required by 49 CFR 195.563(a) and 195.573. Any PIP system could not fully comply with our corrosion control

regulations should a fluid, either seawater or crude oil/water mix, enter the annulus between the carrier pipe and the outer casing pipe.

ADVANTAGES of the Special Permit Action:

The annulus is intended to provide a thermal barrier between the two pipes, which will operate at different temperatures and provide a dry environment to reduce or prevent the development of corrosion. The two pipes will be in a common trench and welded to two fixed bulkheads (see **Figures 4 and 5**) on either end of Liberty Pipeline’s crossing of the Beaufort Sea to create a sealed annulus. When functioning correctly, the PIP design and resulting annulus will provide thermal insulative properties that will mitigate frost heave and thaw, foster a non-corrosive environment by preventing electrolyte from getting into the interstitial space, and provide secondary containment of any crude oil released from the carrier pipe.

DISADVANTAGES of the Special Permit Action:

A 5.68-mile PIP design without CP on the carrier pipe is not addressed in the Federal Pipeline Safety Regulations in 49 CFR Part 195. The special permit conditions are intended to address the potential risks to the design, operation, and maintenance of the Hilcorp Liberty Pipeline, including the extreme temperature differences and differential loads imposed by welding the carrier and casing pipes together at both ends (e.g. 150° F and 25° F, respectively). In general, the lack of CP on the carrier pipe could allow for aggressive corrosion, but the design and special permit conditions are intended to alleviate this risk. Furthermore, construction and repair are more difficult for a PIP design pipeline.

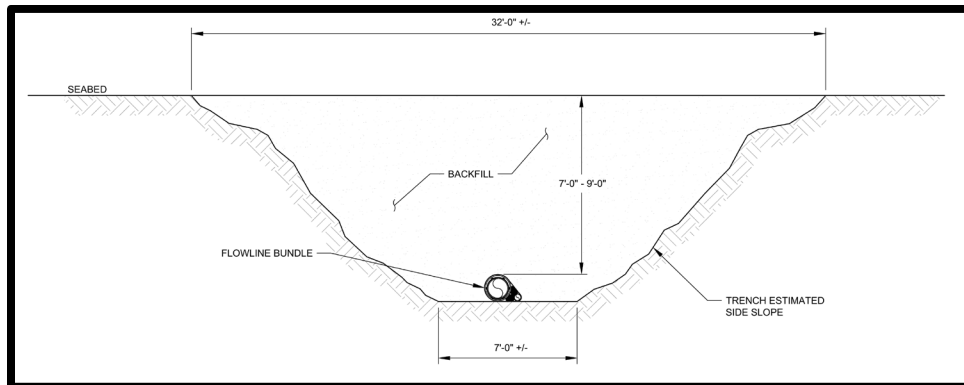


Figure 4 – Typical Trench Section – Offshore Zone

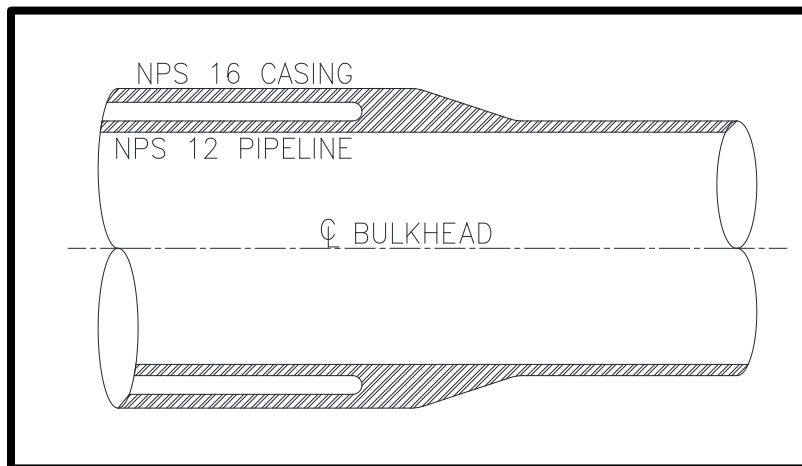


Figure 5 – Bulkhead Schematic

6. Comparative Safety and Environmental Impacts of the Final Action and Alternatives

6.1. Safety: Describe existing safety concerns with operation of this pipeline.

The special permit is intended to address the following risks to the pipeline:

- An ambient temperature of around 25° F on the casing/outer pipe and an internal temperature of 150° F (caused by the temperature of the extracted crude oil) will cause opposing forces on the carrier and casing pipe due to the differing amounts of thermal expansion they will experience. The carrier pipeline will tend to expand more than the casing pipe since it will undergo larger temperature increases following construction and during operation. The effects of these differential temperature-induced forces are compounded by the fact that both pipes are welded to fixed bulkheads, and the carrier pipe will not be able to freely expand. The expanding forces could lead to excessive strains, buckling/denting of the carrier pipe, and/or weakening or failure of circumferential weld seams caused by pulling forces on the casing pipe.
- The presence of moisture in an annular space, or the space between the carrier pipe and the casing pipe, can lead to corrosion. Moisture can enter the annular space during the construction process or due to a leak in the casing pipe during operations. Moisture could remain in the annular space if Hilcorp failed to properly dry the annular space along the

5.68-mile pipeline. Because the carrier pipe will not receive CP, corrosion could advance at a rapid rate. Achievement of a negative (-) 10° F dew point prior to start up and the slight vacuum of (-) 10 psig in the annulus is expected to alleviate this risk.

- 6.2. **Plain language summary of each special permit condition and how it will mitigate pipeline risk.** The full special permit including conditions, with identical numbering, is posted in the docket in www.regulations.gov using docket number PHMSA-2017-0091.³

PHMSA proposes that the above-described risks will be mitigated by the special permit conditions. The following bulleted list provides a plain language summary of each condition and how it targets specific integrity risks.

1. **Applicable Regulations**
 - States that all regulations, except those specifically waived will apply to the pipeline.
2. **Maximum Operating – Pressure, Temperature, Strain and Stress Limits for the Pipeline**
 - Limits strains, temperature and pressure that can damage and cause wear to the steel pipeline. This condition specifies the design and operating parameters upon which the special permit conditions are predicated.
 - Due to the significant strains imposed on the pipeline due to environmental conditions and design, the strain parameters will be imposed to limit the strain that can lead to integrity threats and the longevity of the pipeline.
3. **Integrity Management Program**
 - Hilcorp will be required to treat the pipe in pipe segment as a high consequence area, meaning that the safety requirements in 49 CFR 195.452 apply.
4. **Design, Specifications and Procedures**
 - Hilcorp will be required to develop and implement written procedures for the material, design, construction, operations and maintenance of the pipeline.

³ In the event of any discrepancy between this summary and the conditions as written in the special permit, the special permit is controlling.

- These conditions are intended to prevent situations that could lead to unintended stresses, strains, or creation of defects to or on the pipeline.

5. Pipe – Carrier

- The permit will require the carrier pipe be 12.75-inch diameter and have 0.500-inch wall thickness.
- Includes specifications to ensure proper pipe manufacturing processes and mill testing, required strength, diameter, toughness, and thickness.
- These requirements will protect the pipeline against, strains, corrosion, and cracking. The mill tests seek to identify metal defects that could threaten integrity throughout the life of the pipeline.

6. Carrier Pipe Toughness

- Requires the use of Charpy-V-Notch (CVN) impact tested in accordance with API 5L – Specification for Line Pipe, which ensures a high level of metal toughness.
- Toughness in metal is the ability to absorb energy and plastically deform without fracturing. This quality helps protect against pipeline failure.

7. Carrier Pipeline Design Factor

- The pipeline design factor is a maximum of 0.72. The bulkhead fitting and tie-in piping (two (2) pipe joints on each side of bulkhead for the 12.75-inch diameter carrier pipe) must have a maximum design factor of 0.60.
- These design factors ensure that the pipeline facility is designed to handle a greater level of pressure and strain than actually anticipated on the pipeline.

8. Bends

- No manufactured hot bends or field cold bends are allowed for the subsea cased pipeline, and segments from buried to above ground at the shore must gradually sweep to shore. Directional changes in the pipeline must maintain specific stress levels below industry standards.
- Excessive forces can collect at manufactured or field bends, thereby causing damage (e.g. cracking). This requirement reduces the risk of failure along bends in the pipeline.

9. Flanges and Fittings

- Flanges and fittings must comply with specific industry standards so that they have sufficient strength to withstand the design and operating parameters.

10. CP – Carrier and Casing Pipe

- The casing pipe will be cathodically protected in compliance with 49 CFR 195.563. CP is an electric current applied to a pipeline to prevent corrosion. CP slows or prevents corrosion from occurring in areas where the coating has become disbonded or been removed from the pipe.
- The special permit will require a fusion bonded epoxy coating on the casing pipe external surface. This coating type should prevent corrosion (where it is not damaged) and will not shield the CP from the pipe, which could allow for aggressive corrosion. It is not possible to apply CP to the carrier/inner pipe as required by the Federal Pipeline Safety Regulations, which is the reason Hilcorp requested the special permit from PHMSA.
- The 16-inch diameter casing pipe must be internally coated with the exception of a short segment (less than 4-inches wide) at pipe girth welds. This requirement is a contingency to the possible loss of a dry, inert annulus environment and the creation of a potentially corrosive environment between the 12.75-inch carrier and 16-inch casing (internal portion of the casing). The internal casing pipe coating will help to keep internal steel mill scale and corrosion pitting from occurring after pipe manufacturing and during the transportation, storage, construction and commissioning stages of the pipeline. Since the 12.75-inch carrier pipe is being inserted into the 16-inch casing pipe, it is impracticable to coat the 4-inch wide area at girth welds inside the 16-inch casing due to clearance space issues between the casing and carrier pipes.

11. PIP Design

- In the event of a failure of a pipeline that fully complied with the 49 CFR Part 195, a pipeline failure will result in a release of the contents of the pipeline into the environment at a high pressure. Hilcorp is requesting to use a pipe in pipe design so that, in the event of a failure of the carrier pipe, the casing pipe will

contain the crude oil that would otherwise be released into the Beaufort Sea. To ensure the functionality of this design Hilcorp will be required to:

- Fill the sealed space between the carrier/inner pipe and the casing/outer pipe, known as the “annulus” or “annular space” with an inert gas such as Nitrogen or Argon. Unlike ambient air, which includes oxygen, this inert gas will not react with the pipeline metal to cause corrosion.
- Maintain the pressure of the inert gas in the annulus at -10 psig, which is a slight vacuum through connection to a vacuum system.
- Monitor the pressure of the annulus. In the event of an increase in pressure, it may signal a breach of the carrier pipe, in which case the annulus could fill with crude oil. An increase in pressure may also signal a breach in the casing pipe, in which case the annulus could fill with sea water.
- Maintain dew point and monitor the temperature of the annular space. A dew point at or below -10° F to prevent liquid drop out, in the event that any water vapor remains within the inert gas. Water condensation in the annulus could cause external corrosion to the carrier and casing pipe. In the event of an increase in pressure in the annulus, temperature monitoring showing a low temperature could indicate the presence of sea water, and a high temperature could indicate the presence of crude oil.

12. PIP Bulkhead Design

- The special permit will include requirements for the bulkhead fittings to meet the regulations, standards and undergo tests to ensure that they can maintain the high stresses that they will be subject to due to the opposite forces applied by the two pipes.

13. Bundle and Fiber Optic Cable

- The bundle will include the PIP system, fiber optic cable, spacers, a utility line, and bundle straps.
- The fiber optic cable will be located outside the PIP system and will monitor temperature along the length of the PIP system. It will have the ability to communicate temperature data to the SCADA system. An increase in

temperature as recorded by the fiber optic cable could indicate a release of the heated crude oil.

- This condition will allow prompt notification of temperature change allowing proper emergency actions.
- The bundle must be at least seven feet below the subsea mudline to protect against currents and external forces.

14. Pipe-External Coating

- The special permit will include requirements to ensure the proper application, thickness, and repair of the fusion bonded epoxy coating to the pipe. A properly applied coating provides protection against external corrosion without shielding CP.

15. Monitoring System

- The special permit will require that the pipeline is monitored at all times for pressure, temperature, and flow rate. Changes in any of these values could indicate a failure of the pipeline or an emergency situation.
- The special permit conditions specify the placement of remote closure valves, pressure and temperature transmitters, and flow meters.

16. Casing Pipe- Design and Operating Properties

- The special permit will require that the outer casing pipe meet specific design specifications and undergo certain tests to ensure strength and toughness of the pipe metal.
- The special permit will set specific parameters for normal operating pressure, design pressure, maximum operating pressure, temperature, maximum allowable combined stress, and annulus relief valve pressure.
- Operating within these parameters will protect the pipe metal from additional fatigue and stresses that could threaten the integrity.

17. Construction Quality Control

- The special permit will require that Hilcorp develop and implement a right of way construction monitoring program for procedures, specifications, and training personnel in all aspects of pipeline construction, including:
 - pipe inspection,

- hauling and stringing pipe,
 - welding,
 - non-destructive examination of girth welds,
 - applying and testing field applied coating,
 - lowering the pipeline into the subsea trench,
 - backfilling, and
 - hydrostatic testing including dewatering and drying.
- The special permit will require that Hilcorp develop a Subsea Trench Quality Control Plan and Procedures, which will require:
 - chemical testing of trench soils to predict corrosion risks,
 - trench depth monitoring,
 - trench bottom roughness profiling,
 - backfilling requirements, and
 - use of pipe end protection caps to keep out water during construction.
 - Coating application quality control specifications for external coatings of both casing and carrier pipe must be developed, implemented, and personnel must be trained to ensure the carrier and casing pipe surface cleanliness, application temperature control, adhesion quality, cathodic disbondment, moisture permeation, bending, and minimum coating thickness for girth weld and repair coatings meet the procedure requirements. Both the carrier and casing pipe must be externally coated for corrosion protection.

18. Carrier Pipeline Girth Welds

- The special permit will include requirements for welding procedures and welder tests. If a carrier girth weld test reveals a crack in the weld, the cracked weld must be cut out.
- Over the life of a pipeline, defects in welds resulting from improper procedures can develop into threats to the pipeline integrity, especially for pipelines with higher levels of stress.
- The carrier pipe and coating must be protected from weld splatter.

19. Casing Pipe Girth Welds

- The special permit will include requirements for welding procedures weld tests. If a casing girth weld test reveals a crack in the weld, the crack must be cut out.
- Over the life of a pipeline, defects in welds resulting from improper procedures can develop into threats to the pipeline integrity, especially for pipelines with higher levels of stress.

20. Casing Isolators

- Casing isolators provide support and prevent contact between the carrier and casing pipe.
- The special permit will require a maximum casing isolator spacing of 10 feet consistent with manufacturer specifications.
- The special permit will require the casing isolators to withstand anticipated pipeline loads, deflection, and movement in order to maintain continuous separation between the carrier and casing pipe.

21. Relief Storage Tank

- The special permit will require that a pressure increase in the annulus, caused by the annulus filling with oil or seawater to activate a relief valve and discharge the fluid to a relief storage tank or vessel of adequate capacity.
- In the event of a failure to the carrier pipe, the pressure would rapidly increase in the annulus. This could cause an overpressure situation in the annulus, and a defect in the unpiggable casing could lead to failure, which would lead to oil discharging into the Beaufort Sea.

22. Operations & Maintenance (O&M) Procedures

- The special permit will require that Hilcorp have O&M procedures for operating personnel to ensure proper operation of the CP system, the monitoring of the annulus, implementation of integrity management, and other operating parameters such as monitoring pressure and temperature.
- Rigorous and detailed O&M procedures are intended to reduce the risk of oversight or human error in the operation of the pipeline that could lead to the creation or growth of damage, corrosion, or strain to the pipeline.

23. Monitoring and Determination of Pipeline Strains

- The special permit will require that if specific locations of the pipeline experience high levels of strain, as detected through ILI tools or otherwise, strain demand monitoring processes or devices will be installed or implemented. If high strain is identified, the special permit will require procedures to monitor, evaluate, model, and mitigate strain.
- This monitoring will be intended to prevent the development and growth of anomalies on the pipeline, such as bending, denting, buckling, crumpling, cracking or corrosion that can directly or indirectly result from strain accumulating in vulnerable areas of the pipe.

24. Integrity Assessments

- The special permit will require Hilcorp to perform pipeline assessments using the prescribed ILI tools at the following intervals:
 - Before Pipeline Startup:
 - high resolution (HR) deformation tool,
 - multi-dimensional geospatial mapping tool, and
 - remediate anomalies; all dents treated as “top side” dents.
 - Baseline Assessment- within 15 months of startup, run following tools:
 - HR metal loss,
 - HR deformation, and
 - multi-dimensional geospatial mapping.
 - Second Assessment- within 39 months of startup, run following tools:
 - ultrasonic technology (UT) for metal loss and cracking,
 - HR deformation, and
 - multi-dimensional geospatial mapping.
 - Periodic Assessments- every 2 to 3 years based on existing integrity data:
 - HR metal loss,
 - HR deformation,
 - multi-dimensional geospatial mapping, and
 - UT for metal loss and cracking every other assessment.

- The special permit will require that Hilcorp install a calibration spool with the same PIP design with certain installed defects to test ILI tool accuracy because calibration digs are not feasible in the subsea environment.
- If tool data reveals contact between the carrier and casing pipe, Hilcorp must run HR deformation and Multi-dimensional geospatial pipeline mapping tools, assess the tool data, and remediate as required by 49 CFR Part 195.
- These conditions require Hilcorp to run specific ILI tools more often than required by 49 CFR Part 195 to more quickly identify and respond to integrity risks posed by the forces imposed on the carrier and casing pipe. These additional forces can lead to the creation and growth of anomalies, which can cause carrier or casing failure. The tool runs will detect the presence and characteristics of anomalies, allowing the operator to remediate or monitor the anomalies, as required.

25. Analysis of ILI Tool Data and Discovery of Actionable Anomalies

- The special permit will require Hilcorp to factor in ILI tool accuracy and applicable anomaly growth rates when analyzing ILI tool data.
- The purpose of this condition will be to reduce risk posed by anomalies by attempting to ensure rigorous and accurate characterization of anomalies so that they are remediated in an appropriate time frame, that also meets permitting and scheduling requirements to minimize environmental disturbance, so that they are not able to threaten pipeline integrity.

26. Engineering Critical Assessment for Cracks

- The special permit will require that Hilcorp perform an Engineering Critical Assessment for any crack 50% or less of wall thickness in the inner carrier pipe. Any crack greater than 50% wall thickness or of a certain failure ratio will be treated as an immediate response.
- The purpose of this condition is to remediate cracks of a lesser depth than required by 49 CFR Part 195 due to the risks from strain.

27. Leak Detection System

- This special permit will require:
 - a mass balance system with flow meters at pipeline intersection points,

- a PIP annulus monitoring system for pressure and temperature, and
- a fiber optic cable with temperature monitoring.
- These conditions are intended to ensure that changes to the annulus and external temperature that could indicate a failure of either the carrier pipe or casing pipe are quickly identified so that Hilcorp can take proper remediation/response actions.

28. Monitoring Systems – Carrier Casing Pipe and PIP Annulus

- This condition will require monitoring for changes in: pressure, temperature, settlement, flow, and dew point.
- These conditions are intended to ensure that changes to the carrier, casing, and annulus that could indicate a failure of either the carrier pipe or casing pipe are quickly identified so that Hilcorp can take proper remediation/response actions.

29. Monitored Response Procedures

- This condition will require that if the carrier pipe temperature exceeds the maximum design temperature of 150° F, Hilcorp must reduce the operating temperature within two (2) hours. If the temperature exceeds 150° F for more than 24 hours, Hilcorp must notify PHMSA.
- This condition will also require monitoring and notification to PHMSA for specific temperature changes to the soil surrounding the bundle.
- These conditions protect against excessive heat that can damage the pipeline and require monitoring for temperature changes that can indicate a failure has occurred.

30. CP System Monitoring of the Casing Pipe

- This condition will require that the casing pipe is cathodically protected within six (6) months of placing the subsea segment into service. The inner carrier pipe cannot be cathodically protected, which is the reason that Hilcorp submitted the special permit request.
- Hilcorp will have to install test leads and perform close interval surveys 1 year after construction and then every five (5) years. If more than 20% of test leads fail, the close interval frequency will change to every three years.

- This condition contains specifications about the CP monitoring system and procedures. CP potential readings will be taken yearly and in accordance with specifications in the special permit.
- These conditions are intended to ensure consistent CP on the casing pipe. When properly maintained, CP provides strong protection against corrosion. The tests are intended to find any gaps in protection.

31. SCADA and CPM Systems

- The supervisory control and data acquisition (SCADA) and computational pipeline monitoring (CPM) leak detection systems will be required to comply with 49 CFR 195.444 and 195.446.

32. Data Integration

- This special permit condition requires Hilcorp to conduct, maintain, and annually update data integration for all special permit findings and remediation. PHMSA may request this data starting with the 2nd annual report.
- These conditions are intended to ensure that Hilcorp properly integrates data to view its system holistically, to better identify and remediate pipeline safety threats.

33. Environmental Assessments and Permits

- The special permit requires Hilcorp to evaluate environmental consequences of land disturbances or water crossings needed to implement the special permit conditions. Hilcorp must comply with all local, state, and federal environmental permits in this process.

34. Notices to PHMSA

- This special permit condition requires Hilcorp to provide various notifications to PHMSA during the design and construction and within 2 business days of discovery of an immediate repair condition to ensure close oversight.
- This condition allows PHMSA to proactively identify issues.

35. Annual Report

- This special permit condition requires Hilcorp to prepare and submit an annual report to PHMSA and the public that includes the following information:
 - any integrity threats identified by ILI tools,

- all reportable incidents,
 - all repairs,
 - any ongoing damage prevention, corrosion, and longitudinal strain preventative initiatives and a discussion of the success of the initiatives,
 - data integration information, including irregular changes in pressure, temperature, and dew point where the pipeline exceeded operational parameters, and
 - corporate changes affecting regulatory responsibilities.
- This condition allows PHMSA and the public to have a strong understanding about the integrity threats and maintenance of the pipeline to ensure compliance and sound decision-making.

36. Documentation

- This special permit condition requires Hilcorp to maintain and provide the following upon request:
 - records required by 49 CFR Part 195 and 8-hour hydrostatic test at 1.25 times maximum operating pressure, and
 - steel mill test reports showing wall thickness, yield strength, tensile strength, and chemical composition. This must be maintained for the life of this special permit.
- This condition requires the maintenance of records that are critical to understanding potential integrity risks both in the short term and long term life of the pipeline.

37. Certification

- A Hilcorp senior executive officer, vice president or higher, must certify:
 - The pipeline meets the special permit conditions.
 - The O&M manual has been updated to include all additional operation and maintenance requirements of the special permit.
 - Documentation requirements are complete.
 - All certification requirements in the special permit are complete.
- This condition requires the involvement and oversight of a Hilcorp senior executive officer to better ensure compliance, communication, and awareness.

6.3. Operational Safety: Describe existing safety concerns with operation of this pipeline.

6.3.1 Would operation under a special permit change the risk of leak, rupture or failure?

Although the inner pipeline will not receive CP as required by Code, PHMSA finds that the design, construction, and operation of the carrier pipeline, when in full compliance with the conditions described in the special permit, will meet or exceed the level of safety that a pipeline operating in full compliance would achieve. The casing protects the carrier/inner pipeline from exposure to an electrolyte, therefore reducing the risk of pipeline wall thinning due to corrosion. The casing also protects the sales oil pipeline from external force damage. The casing will also be connected to a relief storage containment, which could contain crude oil leakage from the carrier pipe, in the event of an increase in pressure and failure of the casing pipe.

The casing pipe and the annulus further provides a thermal barrier between the sales oil pipeline and the surrounding environment, which will reduce the potential thaw settlement, which in turn will reduce the calculated pipe stresses.

6.3.2 If a leak, rupture, or failure occurred, would consequences and spill or release volumes be different if PHMSA granted the special permit? Would granting this special permit increase, decrease, or have no change on the risk of failure?

Any potential spill or release volumes will be reduced or eliminated using the PIP design, with relief storage containment connection. Increased pressure in the outer casing pipe would trigger the opening of a relief valve leading to a storage containment for any leaks, reducing the likelihood of a leak to the environment. The opening of the relief valve leading to storage containment will also cause the pipeline to shutdown. The PIP design, continuous monitoring, and SCADA system improve Hilcorp's ability to detect leaks on the sales oil pipeline.

The risk of leak, rupture or failure will decrease under the selected alternative. Under the no action alternative, the pipeline would be required to be completely covered by CP to mitigate corrosion. Leak detection requirements under 49 CFR Part 195 would apply, but there would be no secondary containment.

6.3.3 Would operation under the special permit have an effect on pipeline longevity or reliability? Would there be any life cycle, maintenance, or issues?

Operating under the special permit will not have significant impact on pipeline longevity or reliability due to additional design, materials, and operations and maintenance requirements for the system specified in the special permit. In particular, more rigorous monitoring of the pipeline and associated equipment will be conducted during the life of the project.

Under the no action alternative, which would be a single, cathodically protected pipe, the temperature of the pipeline could lead to more rapid melting of permafrost soils, which could impose greater stresses and strains on the pipeline from settlement.

6.4 Water Resources: Would this special permit impact drinking water resources or result in any changes to the risk level of drinking water?

The requested special permit will not impact any drinking water resources.

6.4.1 Would this special permit affect any wetlands or surface waters during construction or operation? How?

The requested special permit will not change any effects to wetlands or surface waters during construction, in comparison with the no action alternative. Given the special permit conditions, PHMSA believes that the requested special permit will reduce the risk of release to the environment during operation, therefore reducing the risk of impacts to wetlands and surface waters from a spill. PHMSA is not aware of any increased impacts to wetlands or surface waters that could result from the PIP design, rather than a single walled design under the no-action alternative.

6.4.2 What measures would be taken to minimize impacts?

Operation under a special permit will not result in increased impacts during construction as compared to construction under the no action alternative. Discussions of project impacts, generally, are addressed in the FEIS.⁴ The special permit conditions are intended to impose an equivalent level of pipeline safety as full compliance with the PHMSA Code. The special permit

⁴ The BOEM's FEIS and other relevant documents including the published Notice of Availability can be reviewed in the Federal Register for the FEIS for the construction of Liberty Drilling and Production Island and the siting of the Liberty Pipeline.

conditions will allow for more rapid detection of anomalies so they could be remediated at a time to minimize environmental damage.

Detailed mitigation measures are addressed above in Section 6.2 and provided in full detail in the Special Permit Conditions.

6.4.3 Would this special permit require the issuance of any local, state, or federal permits regarding water, such as a § 404 permit from the Army Corps of Engineers?

No, this special permit will utilize a PIP design without CP on the carrier pipe and will not require the issuance of any other local, state, or federal permits than will be issued otherwise. However, the overall Liberty Development & Production Plan will require permitting and approval from various federal agencies, including the Department of the Interior, which is the lead federal permitting agency. The project will also require various State of Alaska permits, including the right -of-way approval.

6.5 Aesthetics: Would this special permit request change the visual character of the special permit segment?

The special permit will not impact the visual character of the Liberty Pipeline system as compared to operation without a special permit. On Liberty Island, Hilcorp will be required to designate tankage for secondary containment in the event of failure of the carrier pipe. Hilcorp already intended to utilize breakout or storage tanks on Liberty Island, but this condition could add a breakout tank or other storage vessel. This is not considered to be a significant addition in the scope of the project.

6.6. Agricultural Resources: Would this special permit impact any agricultural resources?

The requested special permit will not impact any agricultural resources.

6.7. Climate Change and Air Quality: Would this special permit increase or decrease the release of greenhouse gases or other pollutants? Please specify which gases. Would this special permit require the applicant to request any air quality permits?

The requested special permit involves a more complex pipeline facility, including the PIP design, and relief containment. The special permit will also result in more complex operations and maintenance. These realities could lead to moderate increases in the release of certain air

pollutants and greenhouse gases during construction and operations, in comparison to the no action alternative. However, these design and operations conditions are intended to reduce the risk of release to the surrounding environment, which could have greater environmental impacts and lead to the emission of air pollutants from a crude oil release and resulting response efforts, depending on severity.

The requested special permit will not result in any additional air permitting requirements, as compared to operation without a special permit.

6.8. Biological and Cultural Resources: Would ground or sea floor disturbance occur as a result of this special permit? What cultural, biological, and habitat resources are impacted?

The requested special permit could result in a minimal increase in sea floor disturbance during repair of the pipeline. PHMSA believes that the methodology of repair might differ in some cases based on the PIP design because Hilcorp may not be able to use divers to complete repairs for the PIP design. However, the use of divers to conduct repairs would likely not be effective in any event due to low visibility in the relatively shallow waters in this area. PHMSA believes and Hilcorp has indicated that Hilcorp would use a cofferdam to conduct pipeline repairs. If the pipeline were single-walled, Hilcorp would likely use a cofferdam or pull the pipeline up above the water surface onto a barge or surface ice for repairs. Due to the extra digging needed to pull up a line to the surface for a surface repair, PHMSA believes that a cofferdam would actually result in lesser or equivalent environmental impacts.

On the other hand, the PIP design will require more time to complete a repair than a single-walled pipe. This longer repair duration for this action as compared to the no-action could result in slightly greater impacts to the wildlife, in the event that a repair is needed. This difference will increase the duration of noise, sedimentation in the water column, and direct disturbance to organisms living on the sea floor such as polychaetes, bryozoans, crustaceans and mollusks and sea life higher in the food chain that depend on those organisms. However, overall, PHMSA proposes that the selection of the final action alternative will result in lesser risk to the environment due to 1) the lower risk of a release of oil into the environment, and 2) more timely identification of integrity threats so repairs could be scheduled to minimize sea floor disturbance.

6.9. Socioeconomics: Would this special permit result in any disparate impacts to rural, low-income, or minority populations?

The requested special permit will not result in any increased impacts to rural, low-income, or minority populations, as compared to operation without a special permit. The PIP design and the special permit conditions are intended to reduce the risk of release, which could negatively impact Alaskan villages in the area, which engage in subsistence activities including fishing and whaling.

6.10. Transportation: How would the special permit areas be accessed? Would the special permit result in an increase in traffic or require additional roads to be constructed or more frequently maintained?

No permanent access is available to the project area. The area covered by the special permit will be accessed via ice roads, marine access, or helicopter.

The requested special permit will not result in an increase in land based traffic that would require additional roads to be constructed, as compared to operation under the no action alternative.

6.11. Land Use: Would land use or recreation areas be impacted by the special permit?

The requested special permit will not impact land use in the project area, as compared to operation without a special permit, due to its remote location.

6.12. Native Americans: Does this project impact a federally-recognized Tribal Reservation? Has tribal consultation taken place?

With the exception of the Metlakatla Indian Community in Southeast Alaska, there are no Tribal Reservations within Alaska. The Liberty Pipeline is not located near the Metlakatla Indian Community.

The Liberty Pipeline has the potential to impact the communities of Utqiagvik (Barrow), Nuiqsut, and Kaktovik which are inhabited by a majority of Iñupiat Alaska Natives. Hilcorp has met with community members and leadership to obtain feedback about the Liberty Development project.

The special permit will not result in increased impacts to Alaskan Natives, as compared to the no action alternative. PHMSA has contacted Iñupiat Alaskan Native villages in the area to provide

them with information about the special permit and welcome their comments. BOEM, the lead agency for the Liberty Project, has engaged in consultation with these villages.

6.13. Pipeline Failure Mitigation: Explain how or whether a pipeline failure would differ under the selected special permit with Hilcorp’s preventative and mitigative measures?

PHMSA proposes that the likelihood of a pipeline failure will be reduced under the special permit using a PIP design with the special permit conditions. Under the no action alternative, a failure of the pipeline would result in the discharge of crude oil directly in the Beaufort Sea. Under this special permit with conditions, a build-up of pressure in the PIP annulus following a failure of the carrier pipe will open a valve to allow the leaked crude oil to flow from the annulus into attached storage with capacity based on oil flow and shut down time. Continuous pressure and temperature monitoring will also alert Hilcorp of a failure either the inner/carrier pipe or the outer/casing pipe.

6.14. Human Safety: How would human safety be impacted?

PHMSA believes that issuance of and compliance with the special permit will decrease likelihood of a spill, as compared to an operation without a special permit. In the event of a failure of the Liberty Pipeline, it is unlikely anyone would be in the vicinity of the pipeline at the time of failure. Nonetheless, subsistence resources could be impacted by a release. PHMSA believes that the design, construction, operation, and maintenance of the pipeline in full compliance with the special permit will decrease the likelihood of a pipeline failure.

6.15. Natural Environment: How would the natural environment be impacted?

PHMSA believes that issuance of and compliance with the special permit will decrease the likelihood of a spill and associated environmental impacts, as compared to an operation without a special permit.

7. Consultation and Coordination

7.1. Please list the name, title and company of any person involved in the preparation of this document.

- PHMSA
 - Amelia Samaras, Attorney

- Steve Nanney, Engineer
- Chris Hoidal, Engineer
- Joshua Johnson, Engineer

- **Hilcorp Alaska, LLC – (Operator of Liberty Pipeline)**
 - Kate Kaufman, Lead Permit Specialist
 - Jennifer Gardner, Pipeline Project Engineer
 - Mike Dunn, Liberty Project Manager
 - Ben Wasson, Integrity Management Engineer
 - Erin McKay, Regulatory Compliance Manager
 - Michael Baker International – Paul Carson, Technical Manager & Chief Engineer
 - SLR International Corporation – Michelle Turner, Principle Scientist

8. Response to Public Comments Placed on Docket PHMSA-2017-0091

PHMSA published the special permit request in the Federal Register (83 FR 52050) on August October 15, 2018, and the public comment period ended on November 14, 2018, with all comments received through November 14, 2018 being reviewed and considered. The special permit application from Hilcorp, pipeline route maps, public comments, environmental assessment, and special permit conditions are available in Docket No. PHMSA-2017-0091 at: www.regulations.gov. The BOEM’s FEIS and other relevant documents including the published Notice of Availability can be reviewed in the Federal Register for the Final Environmental Impact Statement (FEIS) for the construction of Liberty Drilling and Production Island and the siting of the Liberty Pipeline.

PHMSA received comments from four (4) stakeholders on the Liberty Pipeline special permit. The comments received were for denial of the special permit request. A summary of stakeholder posted comments are:

- Stakeholder Comments Requesting PHMSA to Deny the Special Permit: 4
 - Private Citizens – 2
 - The Wilderness Society (TWS) – 1
 - Center for Biological Diversity - 1

- Stakeholder Comments in support of Special Permit: 0

PHMSA's summarization of the public stakeholder comments and how the concerns are being handled within the special permit are below:

- 1) **Stakeholder Comment**: CP requirements prevent both internal as well as external corrosion. Note that Hilcorp's application only focuses on external corrosion. TWS believes that the CP system is needed to prevent internal corrosion on this pipeline which will be carrying warm – up to 150 °F. – crude oil. While it is true that the outer pipeline may prevent oil from entering the offshore environment if there is a release from the inner pipeline, there still will be adverse construction and remediation-related impacts resulting from that release.
 - **PHMSA Response**: Buried pipelines utilize CP - either using an impressed current or a galvanic anode system - to reduce external corrosion of the pipe metal. Internal corrosion most commonly occurs due to corrosive mixtures of water and certain gases like carbon dioxide (CO²) or hydrogen sulfide (H²S) in the transported fluid. Microbial influenced or induced corrosion can also result in accelerated deterioration of the pipe initiated by different microbial activities present in oil and gas systems. PHMSA regulations in 49 CFR 195.579 require operators to investigate and determine whether the fluid stream in the carrier pipe is corrosive and take adequate steps to mitigate internal corrosion. These mitigation measure include the introduction of corrosion inhibitors, eliminating the corrosive fluid stream, and monitoring the effectiveness of the inhibitors via coupons (pieces of steel pipe that are inserted into the pipeline and routinely measured for metal loss). The ILI devices mandated in the special permit conditions for the Liberty Pipeline will allow for the routine identification and measurement of any internal corrosion to confirm the internal corrosion methods being used by Hilcorp are effective. While there should not be a corrosive environment in the Liberty Pipeline PIP annulus since Hilcorp is being mandated to keep it continuously dry, if water or other corrosive fluids were to enter the annulus, the casing could experience internal corrosion. For that reason, we are revising our special conditions to require Hilcorp to coat the inside of the casing pipe with a corrosion resistant material. The 12.75-inch diameter carrier pipe will have an external corrosion coating. These steps should minimize any release

from either the carrier pipe or the secondary containment provided by the casing pipe. See Special Permit Condition 10(d) for requirements for coating the internal and external surfaces of the 16-inch diameter casing pipe.

2) **Stakeholder Comment**: In order to create an inert environment between the two pipes, Hilcorp proposes to seal the ends of the inner and outer pipelines. Because this approach will create additional pipeline stresses and is contrary to the design used in two similar projects, Ooguruk and Nikaitchuk pipelines, TWS questions why Hilcorp has chosen to use this problematic design. Also, as noted in the Draft Environmental Assessment (EA) developed for this Special Permit the [PIP] design would require more time to complete a repair than a single walled pipe. This longer repair duration for the proposed action as compared to the no-action could result in slightly greater impacts to the wildlife, in the event that a repair is needed. This difference would increase the duration of noise, sedimentation in the water column, and direct disturbance to organisms living on the sea floor such as polychaetes, bryozoans, crustaceans and mollusks and sea life higher in the food chain that depend on those organisms.

- **PHMSA Response**: The Liberty pipeline design appears to be using a similar design as the Ooguruk and Nikaitchuk pipelines. PHMSA does not regulate the crude oil carrier pipe or casing for either of these pipeline systems. PHMSA recognizes that a PIP design has certain merits, particularly if the carrier pipe fails and the casing can contain the oil so it does not enter the sensitive Beaufort Sea. If product leakage should happen, the corrosion control systems for the carrier pipe would neither be effective nor could it be monitored. Additionally, the carrier pipe and casing pipe are expected to expand at different rates causing potentially large loads on the pipes and PIP seals (bulkheads) at the ends of the PIP section. PHMSA does not know if similar loads may be occurring on the Ooguruk and Nikaitchuk pipelines, but the Special Permit Conditions will allow for the monitoring of any excessive deformation that could threaten the integrity of the carrier pipe or casing pipe. We concur that if a repair was needed that it may take longer to construct a safe working environment and minimize environmental damage. For that reason, in response to public comment, PHMSA

has modified the special permit conditions to require identification of integrity threats at lower corrosion and deformation levels in order to schedule the repairs when the least environmental damage is done (if there should be an integrity threat). (See Special Permit Condition 24(h) for anomaly repair safety factors that will require repairs and schedules that will be faster than normal 49 CFR Part 195 requirements.)

- 3) **Stakeholder Comment**: The Draft EA developed for this Special Permit has several deficiencies that must be addressed in the Final EA.
- First and most importantly, the no action alternative utilized for comparison is not appropriate as it assumes a single-wall pipeline in compliance with PHMSA’s CP regulations and not a PIP design in compliance with the regulations. As a result, the Draft EA must be redone comparing the Special Permit to a PIP design with CP, and that redone Draft EA should be made available for public comment.
 - Notably, the two most recent offshore Arctic pipelines constructed were both PIP configurations as those designs represent best practices.
 - **PHMSA Response**: PHMSA does not regulate the two cited PIP crude oil lines (Ooguruk and Nikaitchuq) in the Beaufort Sea. The Liberty Pipeline offshore design approach will be the fourth subsea pipeline installed in the Alaskan Beaufort Sea (Northstar, Ooguruk, and Nikaitchuq). The Liberty Pipeline will be the 3rd pipeline in the Beaufort Sea that utilizes a PIP design for the crude oil carrier pipe, however the other two (Ooguruk and Nikaitchuq) are not regulated by PHMSA since they are carrying non processed crude oil and were deemed to be a production flowline outside of our jurisdiction. Northstar is regulated by PHMSA since the crude oil is processed prior to transportation and uses a conventional single wall pipe design compliant with existing Federal Pipeline Safety Regulations. PHMSA regulates the safety of crude oil pipelines through 49 CFR Part 195. We do not know whether the two pipeline systems meet Federal Pipeline Safety Regulatory requirements. They probably would not meet the CP requirements for the carrier and casing pipelines. We did not consider a PIP alternative to have adequate CP since CP cannot be provided nor monitored

for the sealed inner carrier pipe. PHMSA special permit conditions will mandate more extensive protection through monitoring and maintenance of the annulus and more frequent assessments than the existing Federal Pipeline Safety Regulations to ensure that corrosion is not occurring. PHMSA does want to encourage PIP design in limited instances, e.g. where the environment is very sensitive, but PHMSA wants to ensure that no unintended safety consequences are introduced and that the pipeline stays in compliance with existing safety regulations. (See Special Permit Condition 24(b) through (d) for ILI integrity assessment criteria, which requires short assessment intervals than 49 CFR 195.452.)

- 4) **Stakeholder Comment**: The Draft EA fails to specify the threatened and endangered species present in the area, though it does reference the BOEM’s full Environmental Impact Statement. Notably, there are many such species present in that area including several species of birds: spectacled eiders and Steller’s eiders (pages 3-36); and of marine mammals: bowhead, fin, humpback, and right whales; bearded seals, Steller sea lions, sea otters, and polar bears (pages 3-49). Specifying these species allows for improved public comments and awareness of the potential impacts of the project, and should be included in the Final EA.

- **PHMSA Response**: The commenter is correct that various protected species utilize and inhabit the area of the Liberty Pipeline. The lead agency BOEM has authority to approve siting and construction of the Liberty Development Project, including the Liberty Pipeline. PHMSA has no authority over pipeline siting, and the “no action” alternative that PHMSA is required to consider is a pipeline that fully complies with the minimum standards in 49 CFR Part 195. BOEM initiated formal consultation under the Endangered Species Act with the National Marine Fisheries Service (NMFS) (NMFS Consultation Number: AKR-2018-9747). In July 2018, NMFS issued a Biological Opinion for the Project, which includes an Incidental Take Statement along with Reasonable and Prudent Measures, Terms and Conditions, and Conservation Recommendations. That document is available on the NMFS website:

<https://alaskafisheries.noaa.gov/sites/default/files/biological-opinion-liberty-beaufort073118.pdf>.

BOEM announced the availability of the Record of Decision for the FEIS for the Liberty DPP in the Beaufort Sea Planning Area in the Federal Register (83 FR 54136) on October 26, 2018, at

<https://www.federalregister.gov/documents/2018/10/26/2018-23366/environmental-impact-statement-on-the-liberty-development-and-production-plan-in-the-beaufort-sea>.

5) **Stakeholder Comment**: PHMSA’s Draft EA defines the purpose and need of the proposed action as to require the issuance of a special permit to allow Hilcorp to construct the subsea [PIP] system without applying [CP] to the inner sales oil pipeline as required by 49 CFR 195.563 and 195.573. This purpose and need is entirely inadequate because PHMSA necessarily considered an unreasonably narrow range of reasonable alternatives. PHMSA has a duty to protect the public and the environment from the dangers of transporting oil by pipeline. Specifically, the Pipeline Safety, Regulatory Certainty and Job Creation Act (PSA), 49 U.S.C. 60101, et seq., seeks to “provide adequate protection against risks to life and property posed by pipeline transportation and pipeline facilities by improving the regulatory and enforcement authority of [PHMSA] Id. § 60102. Accordingly, PHMSA should have focused its purpose and need inquiry on objectives that comport with these statutory duties, rather than on appeasing the desires of the applicant.

- **PHMSA Response**: Special permits are allowed through 49 U.S.C. 60118(c) – Compliance and Waivers - which gives PHMSA the authority to grant a special permit, if PHMSA determines that the waiver is not inconsistent with pipeline safety. A special permit is an order by which PHMSA may grant to waive one or more of the Federal Pipeline Safety Regulations and is codified in 49 CFR 190.341. Hilcorp filed for a special permit in accordance with 49 CFR 190.341 and has provided the relevant documents for this special permit request. The Liberty Pipeline special permit request is to waive the CP criteria in 49 CFR 195.563 and 195.573 for the 12.75-inch diameter carrier pipeline being installed

within a 16-inch diameter casing pipe (PIP design). The environmental assessment included two alternatives that compared the design, operations and maintenance of a PIP design (Alternative 2: Proposed Action) to a single wall pipeline without a casing (Alternative 1: No Action Alternative). The 16-inch diameter casing pipe will have CP. The 12.75-inch diameter carrier pipe for the crude oil will not have CP due to it being installed inside a casing pipe, which will shield it from the CP current. The special permit conditions address the possible introduction of an electrolyte, such as water or oxygen, around the carrier pipe or a metallic short in the carrier pipe, which would create an environment that allows corrosion to occur. Further, implementation of the special permit conditions by Hilcorp will provide alternative safety measures to assess, mitigate, and monitor the operations and on-going condition of the carrier and casing pipe to ensure integrity and safety is maintained throughout the operational life of the Liberty Pipeline.

- 6) **Stakeholder Comment**: NEPA evaluation must take place before decisions are made and before actions are taken. Such an approach ensures that agencies will take the requisite “hard look” at environmental consequences before approving any major federal action. But PHMSA’s purpose and need statement indicates that it did just the opposite. In other words, the purpose and need statement demonstrates that PHMSA already made the decision to grant the special permit and that its entire analysis was framed in a way to support that pre-determined outcome.
- **PHMSA Response**: The lead agency BOEM has authority to approve siting and construction of the Liberty Development Project. PHMSA received a special permit request for waiver from 49 CFR 195.563 and 195.573, which require CP of a pipeline and the monitoring of pipeline external corrosion control. In its special permit request, Hilcorp Liberty proposes to construct a PIP design by installing the 12.75-inch diameter carrier pipeline within a 16-inch diameter casing pipe. For this design, it is not possible to provide CP to the carrier/inner pipeline. The casing pipe will be cathodically protected in conformance with 49 CFR 195.563. PHMSA evaluated whether PHMSA should approve the special permit request and allow Hilcorp to deviate from the Federal Pipeline Safety Regulations or

whether the pipeline design must comply fully with 49 CFR Part 195. As stated above, PHMSA has no authority over pipeline siting or whether a pipeline is constructed. Based on its comparison of the “no-action” alternative and the selected alternative, PHMSA proposed extensive technical special permit safety conditions to which Hilcorp must comply. Pursuant to PHMSA’s jurisdiction under the Federal Pipeline Safety Laws and Regulations, Hilcorp may withdraw its special permit request at any time and construct a pipeline that fully complies with 49 CFR Part 195. In that case, Hilcorp would not require a special permit from PHMSA.

- 7) **Stakeholder Comment**: In the alternatives analysis, the agency must provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact. The analysis must “rigorously explore and objectively evaluate all reasonable alternatives.” While an agency is not obliged to consider every alternative to every aspect of a proposed action, the agency must consider such alternatives to the proposed action as may partially or completely meet the proposals goal. In its Draft EA PHMSA considered only two alternatives: granting the special permit (the proposed action) and denying the special permit (the no-action alternative). In examining only these two alternatives, PHMSA failed to “rigorously explore” and “objectively evaluate” all reasonable alternatives to allowing Hilcorp to deviate from the Federal Pipeline Safety Regulations. For example, PHMSA failed to examine an alternative that would require a PIP system with CP, which is particularly inappropriate considering Hilcorp’s stated intent to construct a PIP system and the Draft EA’s statement that stakeholders preferred this construction.

- **PHMSA Response**: PHMSA has no authority to impose the selection of a distinct alternative that exceeds the regulatory requirement. As stated above, assuming approval from other cooperating agencies, Hilcorp could proceed with construction of pipeline that complies with 49 CFR Part 195 without a permit from PHMSA. Nonetheless, PHMSA has carefully analyzed the proposed design of Hilcorp’s Liberty Pipeline, which deviates from 49 CFR Part 195. PHMSA analyzed all potential threats that could affect the pipeline, given the proposed pipe in pipe design, and developed an extensive set of conditions that are designed

to ensure a level of safety that meets or exceeds the safety level in 49 CFR Part 195. PHMSA notes that the casing pipe will be cathodically protected but that there is no known mechanism to supply electric current (i.e. “cathodic protection”) to a 5-mile inner/carrier pipeline that is welded inside a vacuum-sealed annulus. PHMSA is not familiar with any pipeline, whether jurisdictional to PHMSA or not, that utilizes a pipe in pipe design with CP reaching the inner/carrier pipeline.

8) **Stakeholder Comment**: PHMSA failed to consider an alternative that would include additional conditions in the special permit, such as increased inspection requirements. The failure to consider additional conditions is an especially glaring omission given that most proposed conditions merely recite the proposed pipeline design or regulatory requirements with which Hilcorp would be required to comply regardless of the issuance of the special permit. PHMSA also failed to consider an alternative that would restrict the time of year in which the pipeline operates, such as restricting activities from April to October, when waters near the Liberty Project are designated as biologically important areas for bowhead whale feeding, migration, and reproduction.

- **PHMSA Response**: PHMSA is requiring that the Liberty Pipeline to be inspected more frequently and with a varied suite of assessment tools than existing pipeline safety regulations in 49 CFR Part 195. In addition, PHMSA is mandating the environmental conditions of the PIP annulus be controlled and monitored to preclude the creation of a corrosive environment. In order to respond to public concerns, the intervention threshold to address integrity threats has been lowered to allow more time to schedule and repair the pipeline when the least environmental damage is done. (See Special Permit Conditions 11, 13, 15, 16, 17, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, and 32.)

9) **Stakeholder Comment**: The Draft EA fails to take a hard look at the environmental impacts of granting the special use permit, including the increased risk of oil spills. All oil drilling is inherently dangerous and results in both chronic and disaster-related oil spills. An oil spill in the Arctic would have especially dire consequences for the environment and be impossible to clean up. The risks of oil spills are especially heightened given the harsh Arctic environment and Hilcorp’s documented history of

accidents and safety violations. But PHMSA’s Draft EA fails to adequately consider these realities.

- **PHMSA Response:** The lead agency BOEM published a FEIS, which analyzed the potential impacts from an oil spill resulting from a failure of the Liberty Pipeline. That analysis is available at <https://www.boem.gov/Appendix-A-OSRA/>. In the selected alternative that analyzes issuance of a special permit to allow the pipe in pipe design, which PHMSA developed in response to Hilcorp’s special permit application, oil released from a failure of the inner/carrier pipe will be contained in the annular space between the inner/carrier pipe and the outer/casing pipeline. As a special permit condition, Hilcorp must install on the Liberty Pipeline a pressure relief valve connecting the annular space to secondary containment vessels (Special Permit Condition 21).

10) **Stakeholder Comment:** Climate change is causing, and will continue to cause, sea level rise, sea ice melt, and permafrost melt in the Beaufort Sea. Moreover, Alaskan shorelines are eroding at an accelerating rate due to the combined effects of sea-ice loss, increasing sea surface temperatures, increasing terrestrial permafrost degradation, rising sea levels, and increases in storm power and corresponding wave action. Indeed, coastal erosion rates have doubled in the past 50 years along the Beaufort Sea shoreline. Such destabilization can increase the risk of oil spills. For example, the Liberty DPP acknowledges that sea level will rise, and that this will increase the frequency and intensity of strudel scour, which can destabilize pipelines via upheaval buckling.

- **PHMSA Response:** The Liberty pipeline special conditions have been changed to address the continued permafrost degradation, reduced stable sea ice period needed to construct and maintain subsea pipelines, and the risks associated with responding to potential spills in broken ice conditions. PHMSA believes the entire pipeline must be kept in serviceable condition in order to complete the mandated actions on the PIP segment. For that reason, the Special Permit conditions including the assessment and repair criteria is being extended beyond the PIP portion of the Liberty pipeline project and will apply to the entire Liberty Pipeline. (See Special Permit Conditions “Special Permit Segment” definition for the Liberty Pipeline.).

11) **Stakeholder Comment**: PHMSA’s Draft EA fails to address the real and significant risk of subsidence. Changing environmental conditions will impact the stability and operations of the drilling island and pipeline. This will also impact the safety and vulnerability of the operations, increasing the risk of accidents, oil spills, and other hazards. Permafrost melt will impact the pipelines and other infrastructure over the life of the project. These predictable changes in the near future must be analyzed and disclosed in an EA.

- **PHMSA Response**: The operator is required by existing Federal Pipeline Safety Regulations, specifically the integrity management regulations (49 CFR 195.452), to identify, assess and address risks that may impact the integrity and safe operation of their pipeline systems. Special Permit Condition 23 – Monitoring and Determination of Pipeline Strains and Condition 24 – Integrity Assessment will require integrity monitoring for any Liberty Pipeline subsidence and strains through the development and implementation of strain monitoring procedures and the usage of multi-dimensional geospatial pipeline mapping tools for pipeline movement and settlement, and the usage of high resolution deformation ILI tools for pipeline bending or buckling. PHMSA will inspect this pipeline to ensure Hilcorp is in compliance with the existing integrity management regulations and this special permit, and will confirm Hilcorp is addressing the changing environmental conditions and that their safety measures are confirmed for effectiveness through regular ILI assessments.

12) **Stakeholder Comment**: According to the Alaska Oil and Gas Conservation Commission (AOGCC), Hilcorp has a documented pattern of safety violations and disregard for compliance with the law in Alaska. As documented by AOGCC, Hilcorp had more than two dozen violations over a 3.5-year period—so many that the agency concluded that “disregard for regulatory compliance is endemic to Hilcorp’s approach to its Alaska operations. In addition to these actions and violations documented by AOGCC, PHMSA itself has sent Hilcorp numerous warning letters for probable violations of pipeline safety regulations in Alaska since November 2015.

- **PHMSA Response**: PHMSA will monitor Hilcorp’s compliance with the special permit conditions and take appropriate action if Hilcorp shows any disregard for

compliance with the special permit conditions or applicable pipeline safety regulations. The special permit specifies that PHMSA has the sole authority to make all determinations on whether Hilcorp has complied with the specified conditions of the special permit. Under 49 CFR 190.341(j), PHMSA has the authority to revoke, suspend, or modify the special permit if it finds that Hilcorp has failed to comply with any material term or condition of the special permit. Finally, the special permit specifies that PHMSA may issue an enforcement action to Hilcorp if they fail to comply. PHMSA is committed to monitoring Hilcorp's compliance with the terms and conditions of this special permit.

13) **Stakeholder Comment**: Hilcorp should run a second set of tests before implanting any sort of pipeline. These tests should center around the parameters they missed beforehand such as ice gouging frequency, corrosion, upheaval buckling, and occurrence probabilities for thaw subsidence.

- **PHMSA Response**: The Liberty pipeline will require extensive tests during and immediately after construction to ensure the pipeline is ready to receive fluids. PHMSA is also requiring, in exceedance of existing regulations, another inline inspection tool assessment shortly after commissioning to confirm that the pipeline design, construction, and operation have not manifested any problems or pose a risk to the sensitive Arctic environment. (See Special Permit Condition 24(a) through (d)).

• **PHMSA Overall Response and Considerations of Public Safety Concerns:**

PHMSA has reviewed the public comments on docket PHMSA-2017-0091 at regulations.gov through November 14, 2018. Based upon the concerns in the comments as described above, PHMSA has increased the length of the special permit segment by approximately 1.4 miles to include all piping from carrier pipeline launcher to receiver (MP 0.0 to MP 7.2). Additionally, PHMSA has changed the remediation interval timing to further protect the pipeline from possible corrosion leaks and the timing issues of getting repair equipment of site. These additional safety conditions can be reviewed in Special Permit Condition 24(h). Internal coating of the casing pipe was added in Special Permit Condition 10(d) to help prevent internal corrosion. The

implementation of the special permit conditions along all segments of the pipeline will enhance the overall safety and reduce the possibility of environmental impacts from the Liberty Pipeline.

9. Finding of No Significant Impact

PHMSA finds that the issuance of the above described special permit, including full compliance with the special permit conditions by Hilcorp, will not result in a significant impact on the human environment. The special permit conditions must be implemented by Hilcorp as a condition of the waiver of the CP requirements under 49 CFR 195.563 and 195.573. PHMSA believes that the issuance of the special permit, which includes safety conditions that exceed current pipeline safety requirements in 49 CFR Part 195, will have a positive impact on the human environment and is not inconsistent with safety.

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