

SECRETARY'S ASSESSMENT REPORT OF A COASTAL ZONE ACT PERMIT APPLICATION

Re: CZA-437P
Delaware Storage and Pipeline Company
Jet Fuel Additive Project
987 Port Mahon Rd, Dover, DE 19901

October 17, 2019

INTRODUCTION

Under §8.3.4 of the Regulations Governing Delaware's Coastal Zone (Regulations), the Secretary of the Department of Natural Resources and Environmental Control (Department) shall provide a written assessment of any application for a Coastal Zone Act Permit, including the proposed project's likely impact on the six criteria listed in §8.1, as well as a preliminary determination of the sufficiency of the offset project under §9.0. The completion of this assessment acknowledges the application submitted by Delaware Storage and Pipeline Company as administratively complete. The fact that the Department considers the application to be administratively complete does not constitute the Department's position as to whether a permit should be issued or denied. That decision will be made after a public hearing is held and any comments are reviewed.

PROPOSED PROJECT OVERVIEW

Delaware Storage and Pipeline Company (DSPC) serves as the sole provider of jet fuel for Dover Air Force Base (Base) and is seeking the ability to blend three jet fuel additives (an anti-static agent, corrosion inhibitor, and icing inhibitor) onsite. These additives have historically been blended prior to delivery. The U.S. Department of Defense is looking to bring consistency and cost-effectiveness to its fuel delivery and handling systems by requiring facilities to have the equipment onsite to add these products into their fuel delivery systems. All of the additive products exist within the jet fuel that is currently delivered to the Base and are regulated to meet North Atlantic Treaty Organization standards to enhance safety and operations.

DSPC has been operating since 1960 and is included as a heavy industry use that was in operation on June 28, 1971 and, therefore, grandfathered as a non-conforming use under the Coastal Zone Act (CZA). No CZA permits for this site exist presently. In 2018, DSPC submitted a request for a status decision (CZA Project 434SD) and was notified that their proposed activity would require a CZA permit.

The proposed process would require DSPC to construct a 242-square-foot building to hold two separate 250-gallon metal totes for storage of the anti-static agent and corrosion inhibitor. They also plan to use a 12,000-gallon horizontal tank to store the icing inhibitor. Both of these additions would be constructed within an existing tank farm on the property.

The anti-static agent and corrosion inhibitor are proposed to be delivered to the facility in 55-gallon drums and transferred to the totes using a valve injection system, where they would be fed into the pipeline conveying jet fuel from the barge dock to the storage tanks. The icing inhibitor would be delivered via tanker truck, approximately 5,000 gallons at a time, and then offloaded from a tanker and pumped into the 12,000-gallon storage tank through a dedicated pipeline.

This proposed process is modeled after a similar process which is currently in place at a sister company serving McGuire Air Force Base in New Jersey. Expertise from the sister company informed procedure development and details regarding operations and monitoring are included in the application. The applicant believes this information demonstrates that DSPC employees will have appropriate training to safely operate the system. However, because releasing these records could jeopardize the security of the sites, they request that the operations documentation remain confidential.

Additionally, facility inspection reports by the U.S. Coast Guard, DNREC Division of Waste and Hazardous Substances' Tank Management Section, and U.S. Department of Transportation were included in the application. In circumstances where there were inspection items that were not in compliance, documentation is provided showing the corrective actions taken by DSPC. This information demonstrates the applicant's ability to operate safely.

APPLICATION ASSESSMENT

Section 8.3.2 of the Regulations requires consideration of an application's effect on the six criteria of 7 *Del. C.* Ch. 70:

1. Direct and cumulative environmental impacts
2. Economic effects
3. Aesthetic effects
4. Number and type of supporting facilities and their anticipated impacts
5. Effect on neighboring land uses
6. Compatibility with county and municipal comprehensive plans

1. DIRECT AND CUMULATIVE ENVIRONMENTAL IMPACTS

AIR EMISSIONS

The proposed project will result in de minimis air emissions associated with the delivery by truck of the three additives. There will be an estimated 18 deliveries annually with diesel trucks traveling approximately two miles within the Coastal Zone per delivery at an assumed speed limit of 25 miles per hour. The applicant estimated emissions using the *Average In-Use Emissions from Heavy-Duty Trucks* (EPA 2008) to calculate the grams of each pollutant per mile. From this information, total pounds per day and tons per year were calculated, as shown in the table below.

Pollutant	Existing Emissions		Net Increase/Decrease		New Total Emissions		Percent Change (compare tons/year)
	Lbs/day	Tons/year	Lbs/day	Tons/year	Lbs/day	Tons/year	
VOC	-	-	0.000236	0.0000431	0.000236	0.0000431	100%
THC	-	-	0.000239	0.0000437	0.000239	0.0000437	100%
CO	-	-	0.00124	0.000227	0.00124	0.000227	100%
NOx	-	-	0.00477	0.000871	0.00477	0.000871	100%
PM2.5	-	-	0.000112	0.0000204	0.000112	0.0000204	100%
PM10	-	-	0.000121	0.0000221	0.000121	0.0000221	100%
Dice Flash	-	-	0.00337	0.000615	0.00337	0.000615	100%
Total			0.010088	0.0018423	0.010088	0.0018423	

Idling time for the truck delivering the icing inhibitor was assumed to be one hour and the anti-static agent and corrosion inhibitor trucks were assumed to be 30 minutes. However, anti-idling regulations prevent “on-road heavy-duty vehicles with a gross vehicle weight rating of greater than 8,500 pounds” from idling for more than three minutes, unless the operation is listed as an exemption. The icing inhibitor truck must run in order to operate a pump which transfers the additive from the tanker to the designated 12,000-gallon horizontal tank. This activity falls under 7 DE Admin. Code §1145 Subsection 5.5, “Any vehicle using auxiliary power for equipment to perform the intended operation of the vehicle, including, by way of example, a power take off generator for any utility truck...” The trucks delivering the anti-static agent and corrosion-inhibitor, however, do not require a power source to unload the 55-gallon drums. They do not fall under this exemption, nor any other exemption listed, and are subject to the regulations stated above. This also means that the information provided represents an over-estimation of what should be expected during normal operations in the absence of the two trucks idling.

The applicant estimates air emissions from the icing inhibitor to be approximately 1.23 pounds per year (0.000615 tons per year), which includes times of filling and emptying as well as stagnant conditions. Total emissions per year were interpolated using the icing inhibitor’s known vapor pressure and referencing the EPA’s TANKS 4.0.9d model for emissions of ethanol amine and total xylenes, which have vapor pressures below and above that of the icing inhibitor, respectively. These emissions added to those associated with the truck traffic amount to approximately 3.68 pounds per year (0.001842 tons per year).

The anti-static agent and corrosion inhibitor will be stored in sealed containers in a metal building and injected into the fuel through a closed system.

WATER USE AND DISCHARGE

The proposed change in operation will not result in changes in water use and water discharge to surface waters.

STORMWATER

The proposed construction is less than 5,000 square feet of impervious surface and is not subject to regulatory requirements for stormwater management under 7 DE Admin. Code 5101 §1.4.2. Stormwater will infiltrate onsite around the structures.

LAND EROSION

The proposed project site is small and flat. Building construction and tank and pipeline installation will result in minor, temporary soil disturbance.

SOLID AND HAZARDOUS WASTE

Any solid waste created as a result of the construction of the project will be collected, transported, and disposed of at an appropriate facility. Empty containers of anti-static and anti-corrosive additives will be removed and disposed of appropriately.

There will be no generation of hazardous waste.

WETLANDS OR HABITAT FOR FLORA AND FAUNA

Wetlands exist within the land parcel, but none exist within the proposed construction area. Wetlands will not be impacted by project activities. The maps of the site (attached) using State Wetlands 1988 and 2007 data show that the portion of the site designated for the proposed activity does not contain wetland habitat.

No other habitats for flora and fauna exist in the proximate area.

GLARE, HEAT, NOISE, VIBRATION, RADIATION, ELECTROMAGNETIC INTERFERENCE, OBNOXIOUS ODORS

The project is in keeping with the existing general industrial zoning for the site and the existing infrastructure of the tank farm. The proposed activity will be similar to existing activity.

THREATENED OR ENDANGERED SPECIES

The project location is close to the Delaware Bay, where migratory shorebirds, like the red knot, stopover in the spring and fall. The red knot is listed as a threatened species, but the project will not impact the shoreline and the birds are not known to nest on the project site.

2. ECONOMIC EFFECTS

Short-term employment opportunities will be created during the estimated 8-week construction period of the project. Welders are estimated to make \$8,000 per week and concrete and building installers are estimated to make \$8,000 per week.

No new employees will be hired at the site as a result of this project.

There are no expected economic impacts due to environmental degradation, as impacts are de minimis.

3. AESTHETIC EFFECTS

The existing facility has been in operation since 1960 and includes several storage tanks and operational buildings which are visible from Port Mahon Rd. The proposed project will add one storage tank and one small building. These are consistent with the current aesthetics.

The project location is close to Little Creek Wildlife Area and the Delaware Bay.

4. NUMBER AND TYPE OF SUPPORTING FACILITIES IMPACTS

No changes to supporting facilities are proposed.

5. EFFECT ON NEIGHBORING LAND USES

The closest residence is approximately 1,110 feet away from the project location. The facility does not interfere with a person's ability to access recreational facilities or resources.

In the event of a "worst-case" scenario where the entire contents of the 12,000-gallon tank spilled, the environmental impacts would not be expected to interfere with nearby existing businesses, commercial, or manufacturing uses. This kind of scenario could conceivably impact recreational access to Port Mahon.

6. COMPATIBILITY WITH COUNTY AND MUNICIPAL COMPREHENSIVE PLANS

In the findings of the Kent County Board of Adjustment, dated January 31, 2019, the proposed addition to the site amounts to approximately 5% increase in the structures and uses that currently exist at that site. The proposed plan was not found to have an adverse impact on adjacent properties.

OFFSET PROPOSAL

Section 9.1.1 of the Regulations states that offset proposals must “more than offset the negative environmental impact associated with the proposed project of activity requiring a permit.”

As indicated by the assessment, the negative environmental impacts of the proposed project under normal operating conditions consist solely of de minimis increased air emissions. Under the Coastal Zone Program, all negative impacts require an offset, independent of any rules or regulations that have a threshold for permitting.

DSPC proposes a one-time donation to Kent County Conservancy of \$1,000 for the purpose of land conservation within the designated Coastal Zone in Kent County. In determining a sufficient offset proposal, DSPC looked to other DNREC regulatory programs to quantify this donation in terms of air quality benefits.

First, market-based incentives exist for emission reductions of volatile organic compounds (VOCs) and nitrogen oxides (NOx). Delaware Division of Small Business is currently offering VOC and NOx credits for sale at a rate of five tons for \$5,000. Applying this rate to estimated emissions from the proposed project, the annual value would be \$1.25. Therefore, \$1,000 could purchase emission reduction credits for 800 years of site operation.

DSPC also identified methodology from *The Ecosystem Service of Forests Improving Air Quality: A Literature Review* (Rice 2015) to quantify the estimated mean removal rate of sulfur dioxide, nitrogen dioxide, ozone, carbon monoxide, and particulate matter by forest areas. This review examined 33 studies to determine a range of pollutant removal rates for these five pollutants to establish the mean removal rate for each. In total, the review estimates that 11.645 g/m² of the pollutants are removed by forests annually. This equates to 103.9 lbs/acre annually.

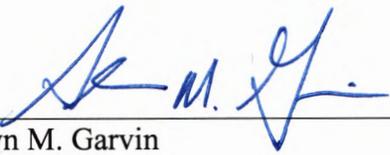
Next, DSPC coordinated with the Delaware Department of Agriculture to determine the monetary value of an acre of forestland. The Forestland Preservation Program acquires properties as conservation easements at a discounted price determined by the property owners (with an average of a 66% discount). Two Kent County properties recently acquired through the Program averaged a value of \$1,218.74 per acre, factoring in the discounted sale. Assuming the average discount was applied to the purchases, the average of the two properties at 100% value would be \$3,583.40 per acre. Therefore, it can be assumed that a \$1,000 donation could purchase 0.28 acres of forestland.

If Kent Conservation District can use the \$1,000 donation for a conservation easement of 0.28 acres, this equates to approximately 29 lbs/acre of pollutant removal annually. Using this methodology, DSPC can clearly and demonstrably show the sufficiency of their offset proposal.

SUFFICIENCY STATEMENT AND CONCLUSION

The application by DSPC addresses the questions of the permit application form and the six criteria required to be reviewed under 7 Del. C. §7004. The applicant proposes an offset in the form of a one-time donation of \$1,000 for land conservation.

This application for a CZA Permit, including supplemental information, has been reviewed by DNREC to determine its completeness. After a thorough review of the application, the Department considers this application to be administratively complete and sufficient for proceeding to public hearing.

Approved: 
Shawn M. Garvin
Secretary, DNREC

Date: 10/25/19



SCALE 1:3600



**State of Delaware Wetlands
KENT COUNTY, DELAWARE**

(in Accordance with the Delaware Wetlands Act # 6607)
Approximate Scale 1:3600

Prepared for: DEPARTMENT OF NATURAL RESOURCES
and ENVIRONMENTAL CONTROL

Produced by: SALISBURY STATE UNIVERSITY
IMAGE PROCESSING & REMOTE SENSING CENTER
SALISBURY, MARYLAND

Legend for Delaware Tidal Wetland Delineations:

- | | | |
|---|--|---|
| B - Beach | IS - Impounded Scrub-Shrub Wetland | S - Tidal Scrub-Shrub Swamps |
| DF - Disturbed Forested Swamp | IW - Impounded Water | SS - Areas flooded by tidal storm surges |
| DM - Disturbed Marsh (vegetation removed for agricultural activities) | LM - Low Marsh | SS* - Areas flooded by storm surges at a higher flood plain elevation |
| F - Tidal Forested Swamp | M - Marsh | T - Tidal Mudflats (in some cases vegetated)/ sand bars |
| IF - Impounded Forested Wetland | MS - Marsh in spoil areas | W - Water |
| ILM - Impounded Low Marsh | N - Non-tidal wetlands (400 acres+, including tidal forested swamps) | WS - Water in a spoil area |
| IM - Impounded Marsh | O - Other (Upland or Non-tidal wetlands less than 400 acres) | / - complexes among different community types (ex. M/S) |

Delaware Wetlands



The Conservation Management Institute (CMI) has updated the existing USFWS National Wetlands Inventory (NWI) and Delaware Statewide Wetland Mapping Project (SWMP) data to meet or exceed NWI procedures and the guidelines of the Federal Geographic Data Committee's Wetland Mapping Standard (document FGDC-STD-015-2009) employing heads-up photo interpretation in a softcopy environment. We identified wetlands with a minimum mapping unit (MMU) of 0.5 acres with smaller, highly recognizable polygons (e.g., ponds) mapped down to approximately 0.10 acres. Photo interpreters (PIs) identified the wetland targets at a scale of approximately 1:10,000 with delineations completed at 1:5,000 and, occasionally, larger as necessary. Polygons were then attributed with a code corresponding to the existing NWI classification scheme (Cowardin et al. 1979) and Delaware specific modifiers, where applicable. The update was completed in ESRI's ArcGIS 9.3.x using 2007 Color Infrared, obtained from the State of Delaware. All spatial and classification changes were made manually using standard photogrammetric techniques. When it was necessary to use ancillary datasets to aid in decisions, PIs would consult one or more of the following: Soil Survey Geographic Database (SSURGO), 1992 color infrared, National Hydrography Dataset (NHD), National Elevation Dataset (NED), NWI, and USGS Topographic maps. After we completed the delineation and attribution of the wetland polygons, datasets were inspected through an in-house quality control process for spatial, classification, and topologic errors before being sent to the U.S. Fish and Wildlife Service (USFWS) and the State of Delaware for final review and corrections. Additionally, the wetlands layer was run through the USFWS verification tool to further ensure the accuracy of polygons and the codes assigned to them. CMI completed the LLWW classification following guidelines provided by the USFWS. These classifications were derived from the Cowardin code, NHD, topography, and spatial relationships between wetlands. We assigned the initial codes based through a largely automated process. Where applicable, this process uses the Cowardin codes to attribute Landscape and Water body type. The next step largely uses water regime and spatial relationships to attribute Landform. We then manually attributed the NHD to assign Water flow. We manually reviewed the dataset and modified the attributes to create a correct and logical dataset. As the automated classification tends to use too fine a scale, we completed the finer step at a smaller scale than the initial classification in consultation with the Fish and Wildlife Service and the State of Delaware. Delaware modifiers are based off spatial data and guidance provided by DNREC. Wetland functional analysis was performed in consultation with Dr. Ralph Tiner of the USFWS.

State of Delaware, USDA FSA