ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT FACT SHEET – DRAFT

Permit: AK0000370 – CROWLEY FUELS LLC, Anchorage Bulk Petroleum Storage Facility

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501

Public Comment Period Start Date: **September 16, 2020**
Public Comment Period Expiration Date: **October 19, 2020**
Alaska Online Public Notice System

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Proposed issuance of an Alaska Pollutant Discharge Elimination System (APDES) permit to

CROWLEY FUELS ALASKA LLC

for wastewater discharges from

ANCHORAGE BULK PETROLEUM STORAGE FACILITY

The Alaska Department of Environmental Conservation (Department or DEC) proposes to reissue APDES individual permit AK0000370 – Crowley Fuels LLC, Anchorage Bulk Fuel Terminal (Permit). The Permit authorizes and sets conditions on the discharge of pollutants from this facility to waters of the United States. In order to ensure protection of water quality and human health, the Permit places limits on the types and amounts of pollutants that can be discharged from the facility and outlines best management practices to which the facility must adhere.

This Fact Sheet explains the nature of potential discharges from the facility and the development of the Permit including:

- information on public comment, public hearing, and appeal procedures,
- a listing of proposed effluent limitations and other conditions,
- technical material supporting the conditions in the permit, and
- proposed monitoring requirements in the permit.

Appeals Process

The Department has both an informal review process and a formal administrative appeal process for final APDES permit decisions. An informal review request must be delivered within 20 days after receiving the Department's decision to the Director of the Division of Water at the following address:

Director, Division of Water

Alaska Department of Environmental Conservation
P.O. Box 111800
Juneau AK, 99811-1800

Interested persons can review 18 AAC 15.185 for the procedures and substantive requirements regarding a request for an informal Department review. See http://dec.alaska.gov/commish/review-guidance/informal-reviews for information regarding informal reviews of Department decisions.

An adjudicatory hearing request must be delivered to the Commissioner of the Department within 30 days of the permit decision or a decision issued under the informal review process. An adjudicatory hearing will be conducted by an administrative law judge in the Office of Administrative Hearings within the Department of Administration. A written request for an adjudicatory hearing shall be delivered to the Commissioner at the following address:

Commissioner

Alaska Department of Environmental Conservation
P.O. Box 111800
Juneau AK, 99811-1800

Interested persons can review 18 AAC 15.200 for the procedures and substantive requirements regarding a request for an adjudicatory hearing. See http://dec.alaska.gov/commish/review-guidance/adjudicatory-hearing-guidance/ for information regarding appeals of Department decisions.

Documents are Available

The Permit, Fact Sheet, application, and related documents can be obtained by visiting or contacting DEC between 8:00 a.m. and 4:30 p.m. Monday through Friday at the addresses below. The Permit, Fact Sheet, application, and other information are located on the Department's Wastewater Discharge Authorization Program website: http://dec.alaska.gov/water/wastewater/

Alaska Department of Environmental Conservation Division of Water Wastewater Discharge Authorization Program 555 Cordova Street Anchorage, AK 99501 (907) 269-6285	Alaska Department of Environmental Conservation Division of Water Wastewater Discharge Authorization Program 410 Willoughby Avenue, Suite 310 Juneau, AK 99801 (907) 465-5180	Alaska Department of Environmental Conservation Division of Water Wastewater Discharge Authorization Program 43335 Kalifornsky Beach Road Soldotna, AK 99615 907-262-5210

TABLE OF CONTENTS

TABLES

APPENDIX A

FIGURES

1.0 INTRODUCTION

On May 5, 2020, the Alaska Department of Environmental Conservation (DEC or Department) received an application from Crowley Fuels LLC. (Crowley) for reissuance of Alaska Pollutant Discharge Elimination System (APDES) Individual Permit AK0000370 – Crowley Fuels LLC, Anchorage Bulk Petroleum Storage Facility (Permit). This Fact Sheet was developed based on the application and supplemental information obtained through the application process.

1.1 Applicant

This Fact Sheet provides information on the reissuance of the Permit for the following entity:

Permittee:	Crowley Fuels LLC
Name of Facility:	Anchorage Bulk Petroleum Storage Facility
APDES Permit Number:	AK0000370
Location and Mailing Address:	459 West Bluff Road Anchorage, AK 99501
Onsite Facility Contact:	Mr. Greg Miller

Outfall Summary

Outfall	Receiving Water	Latitude	Longitude
001	Cook Inlet	61.2322	-149.8948

The location of Outfall 001 is shown on Appendix A, Figure A-1.

1.2 Authority

The National Pollutant Discharge Elimination System (NPDES) Program regulates the discharge of wastewater to the waters of the United States (U.S.). For waters of the U.S. under jurisdiction of the State of Alaska, the NPDES Program is administered by DEC as the APDES Program. This is the second reissuance of the Permit under authority of the APDES Program.

Clean Water Act (CWA) Section 301(a) and Alaska Administrative Code (AAC) 18 AAC 83.015 provide that the discharge of pollutants to waters of the U.S. is unlawful except in accordance with an APDES permit. The Permit is being developed per 18 AAC 83.115 and 18 AAC 83.120. A violation of a condition contained in the Permit constitutes a violation of the CWA and subjects the permittee of the facility with the permitted discharge to the penalties specified in Alaska Statute (AS) 46.03.760 and AS 46.03.761.

1.3 Permit History

The first NPDES permit for the facility was issued by EPA to Standard Oil Company of California, Inc. on November 22, 1974 and authorized the discharge of rain and snowmelt water from the facility secondary containment areas (SCAs) and storm water collection systems. The Permit was administratively extended in June 1979 and, while under extension, the terminal was sold and the Permit transferred to Chevron USA, Inc. On April 1, 2009 EPA reissued the Permit to Chevron USA, Inc., who sold the facility to Crowley Petroleum Distribution, Inc. effective July 25, 2011. On September 27, 2013 Crowley Fuels LLC, (a wholly owned subsidiary of Crowley Petroleum Distribution, Inc.) submitted an application to the DEC for permit reissuance. DEC modified the EPA permit to eliminate parameters created, based on assumptions that the effluent resembled ballast water. DEC made the assumption that the effluent is more representative of contaminated storm water under Refinery Effluent Limitation Guidelines (ELGs) and included concentration limits for oil and grease and total organic carbon (TOC). DEC reissued the Permit

on September 30, 2015 (2015 Permit), which became the first issuance by the Department. Limits based on the refinery ELGs were to be evaluated for applicability during the next reissuance.

The Department received an application for Permit reissuance by Crowley on May 21, 2020. A complete application was submitted in a timely manner prior to the expiration date of the Permit, allowing DEC to administratively extend the 2015 Permit until it can be reissued.

2.0 BACKGROUND

2.1 Facility Information

The facility is located within the Port of Anchorage (POA) industrial area owned by the Alaska Railroad Corporation (ARRC). Other facilities within the area include the ARRC rail yard, other bulk fuel facilities, pipelines, and freight handling facilities (See Appendix A, Figure A-4).

The facility was constructed in the 1940s and is the oldest active petroleum bulk fuel terminal in the POA industrial area. The facility has operated under various owners and has been used to store multiple products including, but not limited to, aviation fuel, diesel fuel, gasoline, lube oils, asphalt products and various additives.

In July 2011, the facility was purchased by Crowley Petroleum Distribution, Inc. to supply approximately three million gallons of jet fuel per month, via pipeline, to nearby Joint Military Base Elmendorf/Fort Richardson (JBER). The facility currently has a truck rack, and 16 fuel storage tanks, 15 of which are in service with one out of service, serving as an emergency response tank, located within a 7.64 acre in SCA. The purpose of an SCA is to protect the surrounding environment, including waters of the U.S. from a release of hydrocarbons, should a tank or pipe failure occur. The SCAs are designed to contain the volume of the largest tank within the SCA and precipitation from a two-year, 24-hour storm event (approximately 110 percent of the largest tank volume in the SCA). Accumulated rain or snowmelt water is periodically discharged from the SCAs to preserve containment volume necessary to capture fuel in the case of a release. The discharge of SCA containment water is to the nearby marine surface waters of Cook Inlet through a large ditch accessible on the North side of the facility.

A fuel pipeline, linked to the nearby POA docks, transfers petroleum products between oceangoing tankers/barges and the facility. The fuel pipeline is the primary means of fuel deliveries and also has an onsite fuel transfer rack to allow fuel to be transferred to and from railroad tank cars. In addition to operating the bulk fuel terminal, Crowley leases the facility parking area in Drainage basin C and warehouse space to other entities, though none exist at the time of this writing. Crowley recently constructed a new truck rack at the facility. However, the SCA of the truck rack is not connected to wastewater collection system. Any waste accumulated in the truck rack is disposed in an alternative manner (e.g., hauled via vacuum truck to a treatment and disposal facility). Crowley complies with annual testing certification requirements of the fire suppression system that uses aqueous firefighting foam (AFFF), but this does not enter the collection system either.

2.2 Subsurface Contamination History and Site Improvements

2.2.1 Contamination History

Multiple petroleum spills have occurred throughout the POA industrial area and have resulted in the facility and adjacent properties being listed as active sites in the DEC contaminated sites data base. There are both onsite and offsite sources of petroleum contamination affecting the facility. The onsite groundwater contamination is attributed to onsite fuel spills, presumably gasoline that occurred at some unknown time in the past that contributes gasoline range organics (GRO) to the groundwater down

gradient from the SCA. The offsite source is associated with a jet fuel release from a neighboring up-gradient property that contributes contamination of diesel range organics (DRO) to the groundwater at certain locations on the property. Not all of the up-gradient groundwater flowing beneath the facility is impacted to the degree that it would exceed water quality criteria for hydrocarbons if discharged to surface water. In addition, the local shallow aquifer has been classified as a non-potable groundwater source by DEC Spill Prevention and Response (SPAR) Contaminated Sites Program (CSP); however, the aquifer is monitored biennially to evaluate attenuation of the hydrocarbon impacts.

Available reports indicate the site was investigated for groundwater contamination as early as 1987 and that twenty-one onsite monitoring wells were originally installed in 1989 to characterize groundwater impacts at the site. In 2015, the CSP approved the groundwater monitoring program for the facility, which required biennial sampling of five of the original monitoring wells (MW-6B, MW-13A, MW-14, and MW-19R at the locations shown on Appendix A, Figure A-3). In 2017, MW-1 was destroyed during site construction activities and was removed from the monitoring network. CSP subsequently approved the current groundwater monitoring program, to include the four remaining monitoring wells, MW-6B, MW-13A, MW-14, and MW-19R the same year. The groundwater monitoring program requires analysis for GRO, DRO, residual range organics (RRO), benzene, toluene, ethylbenzene, and total xylenes reported in milligrams per liter (mg/L). The most recent testing occurred in November 13, 2019 and the corresponding test results indicate that GRO, DRO, RRO, benzene, and ethyl benzene continue to exceed DEC cleanup levels in several of the wells. Comparison of the 2019 and previous years data indicates that contaminant concentrations of DRO, GRO and RRO concentrations are within historic ranges reported for each well. In 2017, it was reported that samples could not be collected from MW-14 due to it being frozen. Table 1 provides a CSP summary of monitoring Well MW-14 historical groundwater data.

Table 1: Summary of Monitoring Well MW-14 Historical Groundwater Data

Sample Date	Parameter Tested (Cleanup Level[1,2])			
	GRO (2.2 mg/L)	**DRO (1.5 mg/L)**	**RRO (1.1 mg/L)**	**Benzene (0.005 mg/L)**
6/08/04	4.70	11.0	---	0.011
5/11/05	5.00	11.0	---	0.012
5/15/06	5.20	15.0	---	0.018
8/21/08	4.38	13.4	---	0.00804
10/08/08	---	---	1.65	0.00715
8/19/09	2.38	5.25	0.596	0.0021
9/01/10	2.70	9.00	<0.780 [3]	0.0040
10/07/11	2.64	8.44	1.18	0.00371
10/26/12	1.56 J+ [4]	2.90	0.195 J [5]	0.00723
10/22/13	3.06	3.98	0.332 J	0.00731
10/23/14	0.641 J	1.03	< 0.250	0.00498 J
11/6/2015	1.10 J+	1.69	0.576	0.00361
10/21/2019	0.620 J+	0.951	0.243 J	0.00139

Notes:

1. Groundwater cleanup levels are from Table C, 18 AAC 75.345 (October 2018).
2. **Bold** indicates reported concentration equals or exceeds cleanup level.
3. "<" indicates the analyte was not detected at or above the laboratory reporting limit.
4. "J+" indicates the result may be biased high due to surrogate failure.
5. "J" indicates the analyte was detected, but at a concentration less than the laboratory reporting limit

2.2.2 Site Improvements

In recent years, facilities within the POA industrial area have had significant improvements to mitigate contaminated soil and groundwater including the following onsite improvements made by Crowley since 2016:

- double bottoms in all active fuel storage tanks,
- a new cathodic corrosion protection system,
- new tank gauging and liquid high-level detection equipment, and
- repairs to the liquid-tight collection system resulting from the 2018 earthquake.

Damage to the liquid-tight collection system during the 2018 earthquake caused infiltration of contaminated groundwater into the collection system and resulted in a permit violation for total aromatic hydrocarbons (TAH) and total aqueous hydrocarbons (TAqH) (See Sections 2.5.2 and 2.6.1). The damage was separated pipeline connections to a catch basin in the SCA, vent pipes, and pipe connections to an oil-water separator (OWS), which subsided during the earthquake due to a poor soil foundation. After Crowley repaired these leaks, discharges came back into compliance with the Permit.

Geomembrane liners were installed in the SCA (Drainage Area A) in 2012 to form an impervious separation from accumulated rain and precipitation from impacting groundwater. A groundwater seep was observed to cause lifting of the geomembrane liner during extreme high groundwater events. To protect the liner system during these events, Crowley bled off the pressure using valved piping beneath the liner to release groundwater into the SCA that mixed with rainwater and snowmelt. For these reasons, the 2015 Permit authorized contingency releases of groundwater from the SCA when it was deemed necessary to protect the SCA liner system provided the discharge does not exceed permit limits. Although permitted in 2015, Crowley reported no instances of high groundwater requiring the release through the valve between 2015 and 2019, suggesting the contingency is unnecessary. Based on concurrence from the permittee, DEC is removing the liner bleed-off contingency in the Permit.

2.3 Facility Drainage Areas

Prior to discharging into the Municipality of Anchorage (MOA) storm drain system that eventually discharges into Cook Inlet, wastewater from the facility drainage areas is either treated in an OWS or controlled using best management practices (BMPs). As reflected in Appendix A - Figure 2, Drainage System, wastewater currently flows from Valve Pit "E" (Valve Pit E) to the OWS, then to the "Lift Station" prior to entering the MOA piped storm drain system to the Cook Inlet outfall. Crowley engaged an environmental engineer to assess the system and determined that Valve Pit E contains a a series of baffles and weirs providing treatment similar to that of an OWS. Crowley proposed, and DEC agreed, to acknowledge that Valve Pit E serves as an OWS. In addition, the proximity of Valve Pit E to an adjacent drainage channel and an existing pipeline from the Valve Pit E to the ditch makes discharging directly to this channel a feasible alternative to using the OWS; the OWS is a known liability with respect to infiltration of groundwater. The adjacent ditch follows the same approximate route as the MOA's storm water system that discharges to Cook Inlet and has an added benefit of having cattails that provide natural treatment prior to reaching Cook Inlet. Facility drainage areas are summarized in Table 2.

Table 2: **Facility Drainage Areas Under Outfall 001**

Drainage Area	Wastewater Source	Treatment
Drainage Area A	Tank Farm SCA	Valve Pit E
Drainage Area B	North Parking Lot	Valve Pit E and BMPs
Drainage Area C	South Parking Lot	Catch basin Carbon Filters BMP
Drainage Area D	Rail Car Rack SCA	Valve Pit E
Pump House SCA	Pump House Floor	Valve Pit E

2.3.1 Drainage Area A

Drainage Area A is an earthen, bermed SCA lined with a geomembrane, primarily to protect the environment from petroleum releases from the above ground fuel storage tanks. Accumulated water in the SCA is inspected to verify there is no visible sheen on the water surface before allowing it to flow out of the SCA and ultimately to Valve Pit E. Rain and snowmelt water flows from catch basins to Storm Drain Manhole SDMH #1 via a pipe network. The SCA water is directed to Valve Pit E where it comingles with flows from other onsite drainages (described below) and onward to the Cook Inlet outfall.

As discussed in Section 2.2.2, the bleed-off valve to preserve the geomembrane liner is no longer used. Hence, the characterization data reflects SCA water discharges without groundwater impacts. Crowley collects raw SCA water and conducts analytical testing prior to discharging through Valve Pit E and the OWS to help ensure compliance. Crowley indicates these pretreatment samples indicate the SCA water meets limits prior to treatment. Hence, the potential contaminated groundwater infiltration in the OWS poses a significant liability in meeting effluent limits though the permittee has made appropriate efforts to eliminate the liability of cross-contamination by attempting to seal a submerged collection system. Note that the discharge of contaminated groundwater is not covered under the Permit and reducing potential for cross-contamination with groundwater is a primary permit objective. Hence, a discharge directly from the SCA to the storm water channel that avoids potential for cross-contamination would appear to be a good practice to consider.

2.3.2 Drainage Area B

Drainage Area B collects rain and snowmelt water from nearby building roof drains and the north half of the paved parking lot that feeds into catch basin B, which is connected to Valve Pit E. There is no valve on the collection system to isolate this storm water from Valve Pit E in case there is contact with pollutants. Instead, pavement sweeping and portable spill containment booms are used as BMPs to help control hydrocarbons and sediment from entering catch basin B. The precipitation and snowmelt collected in Drainage Area B is considered storm water.

2.3.3 Drainage Area C

Drainage Area C collects storm water from the south half of the paved parking lot and associated roof drains and drains directly into a MOA piped storm drain system at catch basin C without being treated. Given there is no practicable way to transfer the storm water from this drainage area to Valve Pit E upstream, the discharge is controlled using catch basin filters, carbon filter fabric, as well as a BMP that includes street sweeping and deployment of portable spill containment booms as necessary to help ensure permit compliance. Like Drainage Area B, precipitation and snowmelt collected in Drainage Area C is considered storm water.

2.3.4 Drainage Area D

Drainage Area D is an SCA for the railcar loading/unloading rack located on the western boundary of the facility. Rain and snowmelt water from this SCA, drains through a valved piping system to Valve Pit E and may be considered storm water after demonstrating the water meets water quality criteria (e.g., no sheen observation). Because it has a valve, the drainage from the rail rack can be controlled in the event of a fuel release or spill. Unlike the SCA in Drainage Area A, the SCA at the rail rack has not been isolated and tested separately from the effluent coming from the OWS, providing a definitive demonstration it meets water quality criteria. Instead, the drainage from the rail rack is sampled after commingling with other sources in Valve Pit E. Samples from the OWS during the previous permit term did not identify noncompliance with water quality criteria, suggesting the drainage from the rail rack can be categorized as storm water.

2.3.5 Pump House Drainage

The pump house has a floor drain that connects to Valve Pit E. The floor drain includes a valve to prevent unwanted or unauthorized discharges from reaching Valve Pit E. Because equipment washdown water may come into contact with pollutants, this wastewater is disallowed to flow to Valve Pit E because it does not meet the definition of an allowable non-storm water discharge. Any spills, releases, or wash water with detergents or contaminants must be removed via vacuum truck and transferred offsite for treatment and disposal as a facility BMP. Hence, the pump house drainage must be managed similar to that from the truck rack as it is not storm water nor an allowable non-storm water.

2.4 Wastewater Treatment

Individual drainage area source contributions, except Drainage Area C, are commingled in Valve Pit E and typically treated by the OWS prior to discharge. Although the OWS removes free-phase hydrocarbons, there is currently no treatment system to remove dissolved-phase hydrocarbons prior to discharge.

The OWS is a two compartment 4,000 gallon, double-walled steel tank equipped with coalescing plate separators and is connected to a 20,000 gallon overflow tank for additional storage capacity. OWS effluent drains into a nine by nine-foot steel lift station sump with a four-foot diameter access port. The sump is the current compliance sample location for Outfall 001. The lift station is equipped with a 500 gallon per minute pump that discharges to the MOA storm drain system. Discharge flow volumes are currently calculated by multiplying the pump runtime by the pump operating flowrate.

As discussed in Section 2.3, the OWS and lift station have multiple pipe and vent penetrations that present the highest liability of allowing infiltration of contaminated groundwater. Hence, using Valve Pit E as an OWS and discharging to the adjacent storm water channel could lead to better environmental protection and permit compliance by avoiding collection system components that infiltration contaminated groundwater.

2.5 Facility Performance and Wastewater Characterization

2.5.1 Discharge Flows

Discharges from the facility are intermittent as they are dependent on rain and snowfall events. Review of monthly Discharge Monitoring Reports (DMRs) indicate the majority of facility discharges occur during the thawed season. Table 3 summarizes flow records from 2015 through 2019 reported in million gallons per day (mgd) as provided by the applicant.

Table 3: Discharge Flow Record (2015 through 2019)

Year	Total Annual Discharge (mgd)	Maximum Monthly Discharge (mgd)
2015	0.129	0.129
2016	0.372	0.372
2017	3.078	0.894
2018	2.183	0.687
2019	2.470	0.807

The flow record in Table 3 appears to be inconsistent. DEC anticipates this inconsistency occurs due to a combination of factors, including, but not necessarily limited to, estimating practices using pump runtime, record keeping, and confusing permit language in the 2015 Permit. DEC promotes the installation of a flow meter and revised permit language to improve consistency in reported flow volumes.

2.5.2 Characterization of Discharge Parameters with Limits

Parameters having numeric effluent limits in the existing permit were examined by reviewing the DMR data submitted during the 2015 Permit term. The parameters reviewed include pH, oil and grease, total suspended solids (TSS), TOC, TAH, and TAqH. Parameters with narrative limitations (i.e., Sheen) were not included. Table 4 compares the effluent limits in the 2015 Permit to monitoring results from December 2015 through December 2019.

Table 4: Characterization of Parameters with Limits (12/2015 through 12/2019)

Parameter (Units)	Data Points	Effluent Limits	Observed Range (Low – High, Avg.) [1]
pH [2] (Standard Units (su))	50	6.5 ≤ pH ≤ 8.5	**5.6** – 8.3, 6.65
Oil and Grease (mg/L)	25	15	< 1.11 – 5.0, 3.18
TSS (mg/L)	25	33	< 0.5 – 32.3, 7.33
TOC (mg/L)	25	110	< 0.5 – 8.15, 2.58
TAH (micrograms per liter (µg/L)) [3]	24	10	0.42 – 8.7, 1.92
TAqH (µg/L) [3]	24	15	0.43 – 10.03, 1.94

Notes:
1. Values that exceed limits are shown in **bold**.
2. Median values are used instead of average values for pH.
3. A value of 62.78 µg/L for TAH and a value of 63.86 µg/L for TAqH have been excluded as outliers from earthquake damage in 2018 (See Section 2.2.2)

The technology-based effluent limits (TBELs) for oil and grease, TSS, and TOC developed in the 2015 Permit are being critically reviewed before retaining them in the Permit. TAH and TAqH are water quality parameters of concern (POCs) that were determined in the reasonable potential analysis (RPA) for the 2015 Permit, to require development of water quality based effluent limits (WQBELs). However, the characterization data used for the 2015 Permit was not representative of contained water or parking lot runoff because the collection system was not liquid-tight at that time and high groundwater infiltrated the leaking collection system allowing for cross contamination from the contaminated groundwater plume. With an understanding that a facility upgrade to establish a liquid-tight system was underway, DEC established WQBELs for TAH and TAqH until the groundwater contamination could eventually be eliminated from the discharge.

The current data, excluding those eliminated as outliers resulting from earthquake damage, indicates the contained water and surface drainage meets water quality criteria for TAH and TAqH. Of the 24 reported data points, there were only seven detected concentrations of TAH and TAqH above the minimum level (ML) of the analytical method. Of the seven datum above detection, only the earthquake outlier exceeded TAH or TAqH criteria (See Table 4, Note 3), which indicates the effectiveness of the liquid-tight collection system when not damaged. Based on low concentrations of the representative data, no mixing zone or RPA is necessary for deriving WQBELs for TAH or TAqH in the Permit, although narrative WQBELs for pH and oil and grease may be appropriate.

2.5.3 Discussion

The overall characterization of the discharge was found to be compliant with limits and well below applicable water quality criteria, with the exception of one low value of pH during notable atmospheric contamination from local fires and a one-time occurrence of elevated TAH or TAqH resulting from damage to the collections systems from a natural disaster (2018 earthquake). Otherwise, the overwhelming number of reported analytical results are compliant and below the effluent limits and most water quality criteria. The high quality of the effluent resembles the characteristics of storm water suggesting future coverage under the Multi-sector General Permit (MSGP) may be possible.

The results for TOC and oil and grease when compared to their respective TBELs were also very low, suggesting the imposition of these limits may not be appropriate for controlling the discharge (See Section 4.1.1). There was however, one elevated result from TSS during the previous permit term that complicates removal of TSS as a TBEL. Nevertheless, while there is no water quality criteria for TSS in State WQS, there is comparable criteria for turbidity is in WQS. At this time, no turbidity data is available to ensure compliance with this criterion and justify it being considered storm water. Given that the known characteristics of the effluent appear to resemble storm water (i.e., pollutants below water quality criteria), DEC may evaluate alternative permitting for the facility (e.g., coverage under the MSGP, or under the MOA Separate Storm Water Permit, etc.) during the next reissuance. To support this possible transition, the permittee must monitor turbidity and make modifications to reduce potential for groundwater infiltration in the effluent, and to document through additional monitoring the raw water quality of the SCA in Drainage Area A to demonstrate it meets water quality criteria, and requirements to be considered storm water.

2.6 Compliance History

2.6.1 Limit Exceedances

A review of DMRs and effluent violations from the EPA Integrated Compliance Information System for the previous permit term was conducted to assess compliance with the 2015 Permit. Table 5 summarizes exceedances from December 2015 through December 2019.

Table 5: Limit Exceedances (12/2015 through 12/2019)

Parameter	Number of Observed Exceedances
pH	1
Oil and Grease	None
TOC	None
TSS	None
TAH	1
TAqH	1

2.6.1.1 **pH Exceedance**

Review of the administrative record indicates that a pH limit exceedance was reported during the month of September 2019 at 5.6 su. In addition to compliance grab samples from the discharging storm water, rainwater collected from the roof and gutter from the adjacent warehouse were also sampled, which all indicated low pH readings. To demonstrate adequate meter calibration, the permittee purchased an additional meter and calibrated both instruments and obtained consistent results. During the period of the pH exceedance, the Bureau of Land Management, Wildland Fire Information website documented an unseasonable outbreak of wildfires between June 2019 and October 2019, likely causing acid rain. Results for the months leading up to and following the pH exceedance were representative of typical, compliant values.

2.6.1.2 **TAH and TAqH Exceedances**

As discussed in Sections 2.2.2 and 2.5.2, the earthquake of November 2018 caused damage to the recently constructed liquid-tight collection system that allowed contaminated groundwater infiltration to impact results for TAH and TAqH. Once the collection system was repaired, the results for TAH and TAqH were again below the respective water quality criteria. Impacts from the earthquake are considered an upset condition that is not considered a violation, or representative data to be used in characterization of the effluent during permit development. The liquid tight collection system effectively reduces infiltration of contaminated groundwater

into the onsite collection system during normal conditions; infiltration due to earthquake damage is not considered normal. Except for the one sample collected immediately after the earthquake damage prior to discovery and repairs, the characterization data from Outfall 001 is considered representative of SCA containment water and site drainage without significant groundwater cross-contamination.

2.6.2 Non-Reporting Violations

During the 2015 Permit term, Crowley failed to submit annual certification statements that the BMP Plan had been reviewed and revised, if necessary. Crowley indicates this was an oversight that they plan to correct moving forward. DEC may modify reporting requirements for certifications to be maintained onsite and provided upon request to reduce unnecessary burden.

3.0 RECEIVING WATERBODY

3.1 Water Quality Standards

Section 301(b)(1)(C) of the CWA requires the development of limits in permits necessary to meet water quality standards by July 1, 1977. Per 18 AAC 83.435, APDES permits must include conditions to ensure compliance with 18 AAC 70 – Alaska Water Quality Standards (WQS). The WQS are composed of waterbody use classifications, numeric and/or narrative water quality criteria, and an Antidegradation Policy. The use classification system designates the beneficial uses for each waterbody. The Antidegradation Policy ensures that the beneficial uses and existing water quality are maintained.

Waterbodies in Alaska are designated for all uses unless the water has been reclassified under 18 AAC 70.230 as listed under 18 AAC 70.230(e). Some waterbodies in Alaska can also have site–specific water quality criterion per 18 AAC 70.235, such as those listed under 18 AAC 70.236(b). The Department has determined that there has been no reclassification, nor has site-specific water quality criteria been established, at the location of the permitted discharge.

3.2 Water Quality Status of Receiving Water

Any part of a waterbody for which the water quality does not, or is not expected to, intrinsically meet applicable WQS is defined as a "water quality limited segment" and placed on the state impaired waterbody list. For an impaired waterbody, Section 303(d) of the CWA requires states to develop a Total Maximum Daily Load (TMDL) management plan for the waterbody. The TMDL documents the amount of a pollutant a waterbody can assimilate without violating WQS and allocates that load to known point sources and nonpoint sources.

Cook Inlet is not included in *Alaska's Final 2018 Integrated Water Quality Monitoring and Assessment Report*, March 6, 2020 (*2018 Integrated Report*) as being impaired. Accordingly, no TMDL has been developed for the receiving water.

3.3 Mixing Zones

The applicant has not requested DEC to evaluate a mixing zone for any of the pollutants in Outfall 001. Nor has the characterization data supporting permit reissuance suggested a mixing zone is necessary. Accordingly, no mixing has been authorized by the Department and any discharged pollutant must meet water quality criteria at the point of compliance as the current data indicates is attainable.

4.0 EFFLUENT LIMITS AND MONITORING REQUIREMENTS

4.1 Basis for Effluent Limits

The Department prohibits the discharge of pollutants to waters of the US (18 AAC 83.015) unless first obtaining a permit issued by the APDES Program that meets the purposes of AS 46.03 and is in accordance with CWA Section 402. Per these statutory and regulatory provisions, the Permit includes effluent limits that require the discharger to (1) meet standards reflecting levels of technological capability, (2) comply with WQS, (3) and comply with other state requirements that may be more stringent.

The CWA requires that the limits for a particular parameter be the more stringent of either TBEL or WQBEL. TBELs are set via EPA-rule makings in the form of ELGs and correspond to the level of treatment that is achievable using available technology. In situations where ELGs have not been developed or have not considered specific discharges or pollutants, a regulatory agency can develop TBELs using best professional judgment (BPJ) on a case-by-case basis. A WQBEL is designed to ensure that the WQS codified in 18 AAC 70 are maintained and the waterbody as a whole is protected. WQBELs may be more stringent than TBELs. In cases where both TBELs and WQBELs have been generated, the more stringent of the two limits will be selected as the final permit limit. The Permit contains case-by-case TBELs based on BPJ and two WQBELs set equal to the applicable water quality criteria: a numeric limit for pH and a narrative limit for visual sheen.

4.1.1 Technology Based Effluent Limits

EPA has not established ELGs for bulk storage facilities. The discharge consists of rain and snowmelt accumulated in SCAs that has the potential for hydrocarbon contamination (i.e., contaminated runoff). In addition, the parking areas may contribute TSS in addition to hydrocarbons. During the reissuance of the 2015 Permit, DEC conducted a critical evaluation of the preexisting TBELs derived by EPA for chemical oxygen demand (COD), five-day biochemical oxygen demand (BOD_5), chloride and TSS that had been established based on the assumption the wastewater would be similar to ballast water. After reviewing facility sources and effluent characteristics available at the time, DEC concluded discharges from the SCAs do not resemble the characteristics of ballast water, and based on a new working assumption, replaced the TBELs for COD, BOD_5, chloride with ones for oil and grease and TOC. Because there had been a violation for TSS that was presumably related to onsite construction activities or parking drainage, DEC chose not to eliminate TSS until representative data under the 2015 Permit could be evaluated without construction activities. The new working assumption used in the 2015 Permit was that the discharges from the facility resemble contaminated runoff similar to that at a refinery as described in the following definition from 40 CFR 419.11 Petroleum Refining Point Source Category:

419.11 Specialized Definitions

> (c) The term ballast shall mean the flow of waters, from a ship that is treated along with refinery wastewaters in the main treatment system.
>
> (g) The term *contaminated runoff* shall mean runoff which comes into contact with any raw material, intermediate product, finished product, by-product or waste product located on petroleum refinery property.

To reevaluate the existing TBELs for oil and grease and TOC, DEC reviewed analytical results generated from five similar bulk fuel permits including the Crowley Permit. However, one outfall from the U.S. Coast Guard (USCG) permit has been excluded due to an unidentified source contribution that makes this discharge an outlier in the statistical evaluation. Overall statistics for TOC and oil and grease (O&G) for all five permits were compared to those of just the Crowley Permit. Table 6 shows the summary of the

statistics used to reevaluate the applicability of the existing oil and grease and TOC TBELs (without USCG Outfall 002).

Table 6: Statistical Evaluation of Oil and Grease and TOC Compared to Five Similar Permits

Statistical Parameter	Outfall 001		All Permits	
	TOC	O&G	TOC	O&G
Maximum	8.15	5. 0	23.4	8.48
Minimum	0.50	1.03	0.05	1.00
Average	2.58	3.18	3.47	2.753
Standard Deviation	1.66	3.16	3.38	1.65
Coefficient of Variation	0.64	0.43	0.97	0.60
Data Set	25	25	460	508
Detected Data	23	1	414	84
Percent Detected	92%	4%	90%	17%

None of the discharges evaluated during this reissuance had results for TOC that indicate the TBELs are applicable; the calculated average concentrations for discharge was < 2.5 % of the 110 mg/L TBEL for TOC. Although the calculated average for oil and grease was approximately 21% of the 15 mg/L TBEL for oil and grease, only 4 % of the sample results reported were above detection (See Table 6). Hence, the effluent does not appear to be impacted by hydrocarbons and the effluent characteristics generally resemble storm water rather than petroleum refinery contaminated runoff. Based on the comparison of statistical parameters in Table 6, oil and grease, and TOC do not appear to be applicable TBELs for the outfall based on the observed averages compared to the 15 mg/L limit for oil and grease and the 110 mg/L limit for TOC, as well as the low occurrence of detectable concentrations for oil and grease. Based on these comparisons and conclusions, the oil and grease and TOC TBELs are being eliminated from the Permit as a technical mistake realized upon review of recent data. With these TBELs eliminated from the Permit, DEC will impose narrative WQBELs for hydrocarbons and monitoring other parameters to the extent necessary to control discharges and comply with WQS.

The TSS limit was retained in the 2015 Permit due to exceedances that were potentially from construction activities (geomembrane liner installation). Before removing the TSS limit, as has been done in four other bulk fuel permits, DEC wanted to reevaluate TSS data from a full permit term after the geomembrane liner was installed to determine if the observed exceedances were representative of the discharge or associated with past construction.

The TSS data summarized in Table 4 indicates the average TSS concentration during the term of the 2015 Permit was 7.3 mg/L, approximately 25% of the TBEL of 33 mg/L. However, in April 2018 the TSS reached 32.3 mg/L, just below the limit of 33 mg/L. DEC believes this value may be representative of a spring breakup event where winter sediment accumulations in the parking areas entered the collection system. Nonetheless, given there still appears to be TSS concentrations in the discharge apparently not associated with past construction, DEC cannot remove the TSS TBEL at this time.

While there is no water quality criterion for TSS per se, the marine water quality criteria for turbidity of 25 nephelometric turbidity units (NTUs) is similar and could be correlated to TSS. Therefore, the Department includes a new monitoring requirement for turbidity to compare to TSS and collect data to evaluate potential future coverage under the MSGP. In addition, the Department emphasizes the most effective means to control TSS is through implementation of BMPs to limit the introduction of sediment (e.g., turbidity) and hydrocarbons into the discharge. Therefore, DEC retains the previous specific BMP for physical removal of sediment and hydrocarbons from parking areas to help ensure continued compliance with permit limits as well as helping ensure the water quality criteria for turbidity is not exceeded, allowing for possible MSGP coverage in the future.

4.1.2 Water Quality Based Effluent Limits

The WQBEL developed for the 2015 Permit for pH is being retained for this Permit. Per 18 AAC 70.020(b)(A)(i), pH must not be less than 6.5 nor greater than 8.5 su ($6.5 \leq pH \leq 8.5$). The Department has set the pH WQBEL equal to the pH water quality criteria on a determination through characterization that the facility can attain the criteria.

Per 18 AAC 70.020(b)(17)(B)(ii), discharges with petroleum hydrocarbons or oil and grease "may not cause a film, sheen, or discoloration on the surface or the floor of the waterbody or adjoining shoreline," DEC is imposing this narrative limitation of no discharge of petroleum hydrocarbons as determined by the presence of film, sheen, or a discoloration of the surface of the SCA containment water prior to discharge. An observed sheen must be removed by treatment methods prior to discharge. This narrative WQBEL prohibiting the discharge of SCA water that has a sheen, has been retained from the 2015 Permit.

The 2015 Permit established limits for TAH and TAqH with a quarterly monitoring frequency. Representative data (i.e., no contaminated groundwater infiltration) indicates there is no reasonable potential for either TAH or TAqH when considering current characterization data. Accordingly, the previous WQBELs for TAH and TAqH are being removed from the Permit. However, DEC requires continued monitoring for TAH or TAqH on a semi-annual basis (April/May in the spring and September/October in the fall) to ensure the liquid-tight collection system continues to prevent infiltration. If after two years there are no exceedances of TAH or TAqH, then the permittee may request approval to reduce the monitoring frequency to annual for the remainder of the permit term. The timing of the annual monitoring must correspond to historic high groundwater periods, assumed to be April or May of each year.

Similar to petroleum hydrocarbons, the Alaska WQS [18 AAC 70.020(b)(20)] also require that discharges "may not, alone or in combination with other substances, cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines." The Permit will contain a general requirement for this narrative to ensure these conditions do not occur from the authorized discharges.

4.1.3 Limit Development Summary

Based on critical review of representative characterization data, all TBELs have been eliminated from the Permit except TSS. To provide information to support characterization of the discharge as storm water, turbidity monitoring has been added at the same frequency as TSS. For WQBELs, the limits for TAH and TAqH have been removed due to critical review of data resulting in no reasonable potential for the discharge to exceed, or contribute to an exceedance of the respective water quality criteria. However, semi-annual or annual monitoring for TAH and TAqH will continue to assess ongoing integrity of the collection system. The remaining effluent limits include WQBELs for pH and narrative oil and grease (visible sheen).

4.2 Effluent Limits and Monitoring Requirements

In accordance with AS 46.03.110(d), the Department may specify the terms and conditions for discharging wastewater in a permit. The Permit includes monitoring requirements so effluent limit compliance can be determined, used the effluent characterize, and impacts to the receiving water assessed. Sufficiently sensitive methods per 40 CFR 136 are required for analyzing collected samples per Section 4.4.3. Table 7 provides the applicable effluent limits and monitoring requirements for Outfall 001.

Table 7: Outfall 001 – Effluent Limits and Monitoring Requirements

Parameter (Units)	Effluent Limits	Monitoring Requirements	
		Frequency	Sample Type
Flow Volume (gallons per day (gpd)) [1]	Report	Daily	Measure or Estimate
pH (su)	$6.5 \leq pH \leq 8.5$	Monthly	Grab
TSS (mg/L)	33	Quarterly	Grab
Turbidity (NTUs)	Report	Quarterly	Grab
Oil and Grease (Sheen) [1]	No visible sheen	Daily	Visual Observation
TAH (µg/L) [2, 3]	Report	Semiannual	Grab
TAqH (µg/L) [2, 3]	Report	Semiannual	Grab

Notes:

1. Flow volumes and visual observations for sheen must be measured daily when discharges occur and recorded in a daily log. Report total monthly flow volumes and average monthly flow volumes determined by dividing the total monthly volume by the number of discharge events for the month.
2. Semiannual monitoring for TAH and TAqH must be conducted during seasonal high groundwater in April or May and September or October of each year of the Permit. See Section **Error! Reference source not found.** details for reporting TAH and TAqH results below detection.
3. If after two years of semiannual monitoring for TAH and TAqH there are no exceedance with applicable water quality criteria and there have been no reported spills or observation of sheen, the permittee may submit a written request to DEC for approval to reduce the monitoring frequency to annual for TAH and TAqH, only. Annual monitoring must be performed in April or May of each year to correspond with seasonal high groundwater.

4.2.1 Reporting TAH and TAqH Results

For purposes of reporting on the DMR for a single sample for TAH or TAqH where the parameter is a summation of results of individual analytes, estimated (e.g., "J" estimates) are considered nondetectable. When all individual analytes are nondetectable, or estimates, the permittee must report the categorical summation of the common method detection limits with a "less than [categorical summation of method detection limits]." If any of the analytes are detectable, the permittee must report the summation of only the detected analytes on the DMR without a less than symbol. See Permit Appendix C for Definition of Categorical Sum.

4.2.2 Relocating Discharge Locations

The initial discharge location is via the existing OWS and lift station that discharges to the piped storm water system. However, the permittee may seek DEC approval to relocate the discharge location from Valve Pit E to the storm water channel along the North side of the channel. This relocation is to support elimination of pollutants associated with infiltration of contaminated groundwater at the OWS and lift station. The permittee must submit system modification plans and a Standard Operating Procedure (SOP) describing sampled and flow measurement to DEC for written approval.

The wastewater quality in Drainage Area A SCA appears to meet the definition of storm water and, if so, could be discharged without treatment through the OWS or Valve Pit E. During the first two years of permit term, Crowley may collect analytical data directly from the SCA to demonstrate compliance with water quality criteria for TAH and TAqH and submit a written request for DEC approval allowing for the direct discharge from the SCA to the storm water channel at the north side of the SCA, thus bypassing treatment. Essentially, the discharge would be considered storm water applicable under the Storm Water Pollution Prevention Plan (SWPPP) incorporated as specific BMP per Section 7.3.1.1. However, after obtaining DEC approval for direct discharge if there is a release of any volume that would result in a

reportable quantity of hydrocarbons (i.e., observation of sheen), then the permittee must contact DEC and discuss treatment options for the SCA water prior to discharge to ensure the wastewater meets applicable water quality criteria for TAH and TAqH. Hence, a treatment system capable of removing both free-phase and dissolved phase hydrocarbons would need to be reviewed by DEC through a plan review process under 18 AAC 72 and approved as a specific BMP under the Permit.

4.2.3 Specific BMPs to Support Permit Compliance

The Permit requires that specific BMPs be developed and implemented for various conditions that may be encountered under the Permit to ensure compliance with limits and/or water quality criteria. The following list four potential specific BMPs:

- Storm Water Pollution Prevention Plan BMPs (See Sections 2.3.1, 2.3.2, 2.3.3, 4.2.2, and 7.3.1.1,
- Aqueous Fire Fighting Foam (See Sections 2.1 and 7.3.1.2),
- Truck Rack SCA and Pump House Drain Isolation (See Sections 2.1, 2.3.4, and 7.3.1.3), and
- Free-phase and Dissolved-phase Hydrocarbon Removal Process (See Sections 4.2.2 and 7.3.1.4).

4.3 Electronic Discharge Monitoring Reports

4.3.1 E-Reporting Rule, Phase I (DMRs)

The permittee must submit a DMR for each month by the 28th day of the following month. DMRs shall be submitted electronically through NetDMR per Phase I of the E-Reporting Rule (40 CFR 127). Authorized persons may access permit information by logging into the NetDMR Portal (https://cdxnodengn.epa.gov/oeca-netdmr-web/action/login). DMRs submitted in compliance with the E-Reporting Rule are not required to be submitted as described in Permit Appendix A – Standard Conditions unless requested or approved by the Department. Any DMR data required by the Permit that cannot be reported in a NetDMR field (e.g. full WET reports, mixing zone receiving water data, etc.), shall be included as an attachment to the NetDMR submittal. DEC has established an e-Reporting Information website (https://dec.alaska.gov/water/compliance/electronic-reporting-rule/) that contains general information about this new reporting format. Training materials and webinars for NetDMR can be found at https://netdmr.zendesk.com/home.

4.3.2 E-Reporting Rule, Phase II (Other Reporting)

Phase II of the E-Reporting Rule specifies that permittees will integrate electronic reporting for all other reports required by the Permit (e.g., Annual Reports and Certifications) and implementation is expected to begin during the term of the Permit. Permittees should monitor the DEC E-Reporting website (https://dec.alaska.gov/water/compliance/electronic-reporting-rule/) for updates on Phase II of the E-Reporting Rule and will be notified when they must begin submitting all other reports electronically. Until such time, other reports required by the Permit may be submitted in accordance with Permit Appendix A – Standard Conditions.

4.4 Additional Monitoring

4.4.1 Additional Monitoring Upon DEC Request

DEC may require additional monitoring of effluent or receiving water for facility or site-specific purposes, including, but not limited to: data to support applications, demonstration of

water quality protection, obtaining data to evaluate ambient water quality, evaluating causes of elevated concentrations of parameters in the effluent, and conducting chronic WET toxicity identification and reduction. If additional monitoring is required, DEC will provide the permittee or applicant the request in writing.

4.4.2 Optional Additional Monitoring by Permittee

The permittee has the option of taking more frequent samples than required under the Permit. These additional samples must be used for averaging if they are conducted using the Department approved test methods (generally found in 18 AAC 70 and 40 CFR 136 [adopted by reference in 18 AAC 83.010]). The results of any additional monitoring must be included in the calculation and reporting of the data (e.g., calculation of averages) on eDMRs as required by the Permit and Standard Conditions Part 3.2 and 3.3 (Permit Appendix A).

4.4.3 Sufficiently Sensitive Methods

Monitoring for effluent limitations must use methods with method detection limits that are less than the effluent limitations or are sufficiently sensitive. Monitoring effluent or receiving water for the purpose of comparing to water quality criteria must use methods that are less than the applicable criteria or are sufficiently sensitive. Per 40 CFR 122.21(e)(3)(i), a method approved under 40 CFR 136 is sufficiently sensitive when:

> (A) The method ML is at or below the level of the applicable water quality criterion for the measured parameter, or
>
> (B) The method ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in the discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge (e.g., not applicable to effluent or receiving water monitored for characterization), or
>
> (C) The method has the lowest ML of the analytical methods approved under 40 CFR 136 for the measured pollutant or pollutant parameter (e.g., the receiving water concentration or the criteria for a given pollutant or pollutant parameter is at or near the method with the lowest ML).

The determination of sufficiently sensitive methods discussed above for a single analyte is not applicable to TAH and TAqH due to the summation of multiple of analytes. Therefore, for TAH and TAqH, DEC will apply a typical multiplier of 3.2 to the categorical sum of the method detection limits to "estimate" an ML for comparison with water quality criteria for TAH and TAqH. If the "estimated ML" is greater than the criteria, 10 µg/L and 15 µg/L respectively, DEC may request submittal of the analytical report to conduct a comprehensive review of those particular results.

5.0 ANTIBACKSLIDING

Per 18 AAC 83.480, "effluent limitations, standards, or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the 2015 Permit." Per 18 AAC 83.480, a permit may not be reissued "to contain an effluent limitation that is less stringent than required by effluent guidelines in effect at the time the Permit is renewed or reissued."

Effluent limitations may be relaxed as allowed under 18 AAC 83.480(b), CWA Section 402(o) and CWA Section 303(d)(4). 18 AAC 83.480(b) allows relaxed limitations in renewed, reissued, or modified permits

when there have been material and substantial alterations or additions to the permitted facility that justify the relaxation, or, if the Department determines that technical mistakes were made.

CWA Section 303(d)(4)(A) states that, for waterbodies where the water quality does not meet applicable WQS, effluent limitations may be revised under two conditions, the revised effluent limitation must ensure the attainment of the WQS (based on the waterbody TMDL or the waste load allocation) or the designated use which is not being attained is removed in accordance with the WQS regulations.

CWA Section 303(d)(4)(B) states that, for waterbodies where the water quality meets or exceeds the level necessary to support the waterbody's designated uses, WQBELs may be revised as long as the revision is consistent with the State's Antidegradation Policy. Even if the requirements of CWA Section 303(d)(4) or 18 AAC 83.480(b) are satisfied, 18 AAC 83.480(c) prohibits relaxed limits that would result in violations of WQS or ELGs (if applicable).

State regulation 18 AAC 83.480(b) only applies to effluent limitations established on the basis of CWA Section 402(a)(1)(B), and modification of such limitations based on effluent guidelines that were issued under CWA Section 304(b). Accordingly, 18 AAC 83.480(b) applies to the relaxation of previously established case-by-case TBELs developed using BPJ. To determine if backsliding is allowable, the regulation provides five regulatory criteria in 18 AAC 83.480(b)(1-5) that must be evaluated and satisfied.

5.1 Technology-Based Backsliding

TBELs for TOC and oil and grease have been discontinued at the outfall based on the critical review of analytical data from December 2015 through December 2019 being consistently and significantly well below limits, and indicating no correlation with hydrocarbon sources (See Section 4.1.1). The basis for removing these TBELs is based on obtaining new data since the first imposition of the limits that indicate assigning the TBELs based on similarity with contaminated runoff from oil refineries was a technical error. The Department finds the changes outlined above are consistent with 40 CFR 122.44(l) and 18 AAC 83.480 and does not result in a violation of WQS.

5.2 Water Quality-Based Backsliding

WQBELs for TAH and TAqH have been removed from the Permit based on a critical review of new data obtained post-installation of a liquid-tight collection system that eliminated infiltration of hydrocarbon impacted groundwater. None of the representative data of the authorized discharge were above applicable water quality criteria for TAH and TAqH. In addition, DEC determined there is no reasonable potential for the discharge to exceed, or contribute to an exceedance, of water quality criteria. Accordingly, a WQBEL for TAH or TAqH has not been included in the Permit as the discharge complies with WQS. Per CWA 402(o)(1), backsliding is allowable as long as it does not violate an ELG and complies with WQS including the Antidegradation Policy per CWA 303(d)(4).

6.0 ANTIDEGRADATION

6.1 Legal Basis

Section 303(d)(4) of the CWA states that, for waterbodies where the water quality meets or exceeds the level necessary to support the waterbody's designated uses, WQBELs may be revised as long as the revision is consistent with the State's antidegradation policy. Alaska's current antidegradation policy and implementation methods are presented in 18 AAC 70.015 *Antidegradation Policy* (Policy) and in 18 AAC 70.016 *Antidegradation implementation methods for discharges authorized under the federal Clean Water Act* (implementation methods). The Policy and implementation methods have been amended through April 6, 2018; are consistent with 40 CFR 131.12; and were approved by EPA on July 26, 2018.

6.2 Receiving Water Status and Tier Determination

Per the implementation methods, the Department determines a Tier 1 or Tier 2 classification and protection level on a parameter by parameter basis. The implementation methods also describe a Tier 3 protection level applying to designated waters, although at this time no Tier 3 waters have been designated in Alaska.

The marine waters of Cook Inlet, covered under the Permit, are not listed as impaired (Categories 4 or 5) in the *2018 Integrated Report*. Therefore, no parameters have been identified where only the Tier 1 protection level applies. Accordingly, this antidegradation analysis conservatively assumes that the Tier 2 protection level applies to all parameters, consistent with 18 AAC 70.016(c)(1).

Per 18 AAC 70.015(a)(2), if the quality of water exceeds levels necessary to support propagation of fish, shellfish, wildlife, and recreation in and on the water, that quality must be maintained and protected, unless the Department authorizes a reduction in water quality.

Prior to authorizing a reduction of water quality, the Department must first analyze and confirm the findings under 18 AAC 70.015(a)(2)(A-D) are met. The analysis must be conducted with implementation procedures in 18 AAC 70.016(b)(5)(A-C) for Tier 1 protection, and under 18 AAC 70.016(c)(7)(A-F) for Tier 2 protection. These analyses and associated findings are summarized below.

6.3 Tier 1 Analysis of Existing Use Protection

The summary below presents the Department's analyses and findings for the Tier 1 analysis of existing use protections per 18 AAC 70.016(b)(5) finding that:

(A) existing uses and the water quality necessary for protection of existing uses have been identified based on available evidence, including water quality and use related data, information submitted by the applicant, and water quality and use related data and information received during public comment;

The Department reviewed water quality data, environmental monitoring studies, and information on existing uses in the vicinity of the discharge submitted by the applicant. The Department finds the information reviewed as sufficient to identify existing uses and water quality necessary for Tier 1 protection.

(B) existing uses will be maintained and protected*;*

Per 18 AAC 70.020 and 18 AAC 70.050, marine waters are protected for all uses. Therefore, the most stringent water quality criteria found in 18 AAC 70.020 and in the *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances* (DEC 2008) have been applied where appropriate. The Permit includes WQBELs that are based on meeting water quality criteria at the point of discharge. Because the criteria are developed such that meeting the criteria protects the uses of the waterbody and all applicable criteria are met at the point of discharge, then the uses of the waterbody as a whole are being maintained and protected.

(C) the discharge will not cause water quality to be lowered further where the department finds that the parameter already exceeds applicable criteria in 18 AAC 70.020(b), 18 AAC 70.030, or 18 AAC 70.236(b).

The Permit will require that the discharge shall not cause or contribute to a violation of WQS. As previously stated, the marine waters of Cook Inlet covered under this Permit are not listed as impaired; therefore, no parameters were identified as already exceeding the applicable criteria in 18 AAC 70.020(b) or 18 AAC 70.030. In addition, there have been no site-specific water quality criteria established for the waterbody segment in the vicinity of the discharge per 18 AAC 236(b).

The Department concludes the terms and conditions of the Permit will be adequate to fully protect and maintain the existing uses of the water and that the findings required under 18 AAC 70.016(b)(5) are met.

6.4 Tier 2 Analysis for Lowering Water Quality Not Exceeding Applicable Criteria

6.4.1 Scope of Tier 2 Analysis

Per 18 AAC 70.016(c)(2), an antidegradation analysis is only required for those waterbodies needing Tier 2 protection and which have any new or existing discharges that are being expanded based on permitted increases in loading, concentration, or other changes in effluent characteristics that could result in comparative lower water quality or pose new adverse environmental impacts. Additionally, per 18 AAC 70.016(c)(3), DEC is not required to conduct an antidegradation analysis for a discharge the applicant is not proposing to expand.

Given this Fact Sheet is the basis for reissuing the Permit authorizing one discharge, DEC reviewed the information provided by the applicant to determine if the discharge requires a Tier 2 evaluation. The review indicates the information provided is sufficient and credible per 18 AAC 70.016(c)(4) and does not identify that there is an expanded limit or introduction of a new discharge. Based on this analysis, there is no increase in limited loadings, concentrations, or other effluent changes that would result in a comparative lower water quality or pose new adverse environmental impacts to trigger Tier 2 analysis. Accordingly, a Tier 2 analysis has not been performed.

7.0 OTHER PERMIT CONDITIONS

7.1 Standard Conditions

Appendix A of the Permit contains standard regulatory language that must be included in all APDES permits. These requirements are based on the regulations and cannot be challenged in the context of an individual APDES permit action. The standard regulatory language covers requirements such as monitoring, recording, reporting requirements, compliance responsibilities, and other general requirements.

7.2 Quality Assurance Project Plan

The permittee is required to develop and implement a facility-specific Quality Assurance Project Plan (QAPP) that ensures all monitoring data associated with the Permit are accurate and to explain data anomalies if they occur. The permittee is required to develop and implement procedures in a QAPP that documents standard operating procedures the permittee must follow for collecting, handling, storing and shipping samples; laboratory analysis (e.g., most sensitive methods); and data reporting. If a QAPP has already been developed and implemented, the permittee must review and revise the existing QAPP to ensure it includes the necessary content. The permittee must submit a letter to the Department within 90 days of the effective date of the Permit certifying that the QAPP has been revised and implemented. The QAPP shall be retained onsite and made available to the Department upon request.

7.3 Best Management Practices Plan

A BMP Plan presents operating and housekeeping measures intended to minimize or prevent the generation and potential release of pollutants from a facility to the waters of the U.S. during normal operations and additional activities. Per 18 AAC 83.475(4), “A permit must include best management practices to control or abate the discharge of pollutants and hazardous substances in a permit when the practices are reasonably necessary to achieve effluent limitations and standards…”

Within 90 days of the effective date of the Permit the permittee must review, revise as necessary, and implement the BMP Plan to address current activities at the facility and submit written certification of the review, revision and implementation to DEC.

In each subsequent year of the Permit, the permittee must establish a committee to review and revise the BMP Plan as necessary to address any modifications or changes to operational practices at the facility and to continue to meet the objectives and specific requirements of the Permit. The permittee must document through written certification that the BMP Plan review committee has reviewed the BMP Plan, and modified if necessary, by January 31st of each year the Permit remains in effect. However, the annual certification need not be submitted to DEC but rather retained onsite and made available to DEC upon request.

7.3.1 Outfall 001 Specific BMP Plan Requirements:

The Outfall 001 BMP Plan shall address standard operation procedures and the following unique conditions at the Facility.

7.3.1.1 Storm Water Pollution Prevention Plan

A secondary goal during the Permit term is to segregate storm water and allowable non-storm water discharges (i.e., discharges meeting applicable water quality criteria) from contaminated discharges. Storm water and allowable non-storm water discharges would be managed under a SWPPP; whereas, contaminated discharges would require compliance with effluent limits in Table 7, the primary goal of the Permit.

The permittee must develop and implement BMPs to eliminate contamination to the extent practicable in storm water at the facility using storm water pollution prevention practices. For the Permit, the term "storm water" is given the meaning of "storm water" associated with industrial activity as defined in 40 CFR 122.26(b)(14). The BMPs must specify monitoring storm water discharges to meet the minimum monitoring requirements of 40 CFR 122.44(i)(4)(i, ii, and iii). If the evaluation required by 40 CFR 122.44(i)(4)(i) identifies that additional measures are necessary to reduce pollutant loading, then the storm water pollution prevention practices shall be amended within six months to appropriately reduce pollutants.

The parking and access areas of the Crowley Anchorage Terminal, Drainage Areas B and C, do not come into contact with potential sources of contamination and discharges from these areas are appropriately considered storm water under the permit. In addition, upon demonstration by the permittee using isolated analytical testing of the SCA water in Drainage Area A, this SCA water may also be considered storm water allowing the permittee to segregate the SCA water from the outfall at Valve Pit E and direct discharge from the SCA to the nearby storm water channel under approval from DEC (See Section 4.2.2). If a release of any volume or an observation of a sheen occurs, the SCA water would no longer be considered storm water and would either be treated and discharged through Valve Pit E and subject to the monitoring and limitations in Table 7, or, be treated per Section 7.3.1.4 to remove free-phase and dissolved-phase hydrocarbons (i.e., meet water quality criteria for TAH and TAqH post-treatment) in order to continue direct discharging to the storm water channel as an allowable non-storm water discharge. Any and all analytical results of the isolated SCA water or post-treatment water must be maintained in the current SWPPP and made available to DEC as required per the Permit or upon request.

7.3.1.2 **Aqueous Fire Fighting Foam**

The permittee must maintain BMPs to limit, manage, and control AFFF discharges from the fire system during maintenance and testing. The uncontrolled release of AFFF containing perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic (PFOS) to the environment is not permitted unless such action is warranted by an emergency. Any non-emergency action associated with AFFF must be performed with appropriate controls to prevent releases to the environment, including storage, training, and maintenance of the firefighting system. If an environmentally suitable substitute becomes available and approved for use by other agencies having jurisdiction, Crowley must evaluate it for compatibility with facility systems and if suitable, remove, dispose, and replace the legacy AFFF.

7.3.1.3 **Truck Rack SCA and Pump House Drain Isolation**

Given the truck rack is isolated from the collection system and is not an authorized discharge source under the Permit because of periodic AFFF testing, the permittee must develop a specific BMP to ensure that potentially contaminated water from the truck rack does not commingle with other onsite wastewaters and be discharged under the Permit. In addition, because the pump house floor drain is not considered to be storm water (i.e., not related to precipitation or an allowable non-storm water source), DEC recommends keeping the valve closed to disallow discharging under the Permit. Instead, the equipment repair/washdown water must be disposed in a manner similar to the truck rack. To help ensure these potentially contaminated sources are not discharged under the Permit, the permittee must develop and implement SOPs to ensure isolation and proper disposal practices be included as specific BMP in the BMP Plan.

7.3.1.4 **Free-phase and Dissolved-phase Hydrocarbon Removal Process**

Discharges from the SCA or other sources could become impacted by hydrocarbon contamination, which could limit discharging the water as storm water. If desired, the permittee may develop and implement BMP tools (i.e., hydrocarbon treatment) to help ensure compliance with Permit limits or water quality criteria for situations where hydrocarbon contamination is encountered. The BMP tools may include treatment procedures or systems that have been submitted to the Department prior to adopting as BMP Toolkit component. The BMP Plan must also include BMPs for hydrocarbon removal based on the observation of a sheen. This requirement may particularly important for situations where there is a likelihood of hydrocarbons being present in the discharge due to contaminated groundwater infiltration or a spill in the SCA of Drainage Area A.

7.4 Groundwater Infiltration Monitoring and Corrective Actions

During the previous term of the 2015 Permit, Crowley completed an upgrade to effectively seal the onsite collection system from infiltration of contaminated groundwater when seasonally high groundwater submerges the collection system. Given the potential for the liquid-tight collection system to encounter leaks over time, the Permit requires ongoing confirmation of liquid-tightness via annual sample collection during seasonally high groundwater and analyzing for hydrocarbons, TAH and TAqH. In the event that an annual sample event suggests there is a leak in the liquid-tight collection system, the permittee must notify DEC of the occurrence (e.g., notice of noncompliance) and make immediate corrective actions to reseal the collection system from contaminated groundwater infiltration. The permittee must conduct monthly confirmation testing for TAH and TAqH after immediately implementing corrective actions to demonstrate the repairs have been successful. The permittee must implement corrective actions until the

infiltration of groundwater has been eliminated, or reduced, such that the effluent returns to meeting water quality criteria for TAH and TAqH.

8.0 OTHER LEGAL REQUIREMENTS

8.1 Endangered Species Act

The Endangered Species Act (ESA) requires federal agencies to consult with the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS), and the US Fish and Wildlife Service (FWS), if their actions could beneficially or adversely affect any threatened or endangered species. As a state agency, DEC is not required to consult with these federal agencies regarding permitting actions; however, the Department voluntarily requested information from them regarding threatened or endangered species in the vicinity of the facility in emails dated May 27, 2020.

FWS responded to DEC's request in an email dated May 27, 2020 and provided a link to their website at http://ecos.fws.gov/ipac/ for determination of species under their jurisdiction. DEC accessed the website and utilized its Information, Planning, Conservation System (IPaC) feature to generate a Natural Resources of Concern listing for the facility site, which indicated there are no listed species within the vicinity of the project.

A DEC query made on the FWS endangered species website (URL address below) revealed the following endangered species may occur in Cook Inlet in the vicinity of the facility's discharge:

Cook Inlet beluga whales (*Delphinapterus leucas*) are listed as endangered under the ESA and are regularly observed in the waters near the POA in lower Knik Arm. The FWS and NOAA Fisheries also lists the Northern Sea Otter (*Enhydra lutris kenyoni*) as an endangered species with critical habitat in the waters of the Cook Inlet which includes the POA area. As stated above, listed species were cited on the following Fish and Wildlife Service website:

https://ecos.fws.gov/ipac/location/N64IY5D6ZVGANFVDCFOKUSVM24/resources#endangered-species

All marine mammals are protected under the Marine Mammal Protection Act, including the harbor porpoise (*Phocoena phocoena*) and harbor seal (*Phoca vitulina*), which have been documented in and around the POA area (Sheldon et al. 2014, Boveng et al. 2012). The POA, where the facility is located, was excluded as critical habitat in consideration of national security interest.

8.2 Essential Fish Habitat

Essential fish habitat (EFH) includes waters and substrate (sediments, etc.) necessary for fish from commercially fished species to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires federal agencies to consult with NOAA when a proposed discharge has the potential to adversely affect (reduce quality and/or quantity of) EFH. Although DEC, as a state agency, is not required to consult with these federal agencies regarding permitting actions, the Department also voluntarily requested information from the NMFS regarding essential fish habitat in the vicinity of the facility.

As of this writing, NMFS has not responded to DEC's request for information. However, past correspondence with NMFS has noted that EFH, consisting of the aquatic habitat necessary to allow salmon production needed to support a long-term sustainable salmon fishery, has been designated in the project area that further information on habitat and EFH within Alaska can be found at http://www.alaskafisheries.noaa.gov/habitat/efh.htm. DEC accessed the NMFS website and identified EFH species in the vicinity of the facility which include coho, pink and sockeye salmon species.

8.3 Ocean Discharge Criteria Evaluation

CWA Section 403(a), Ocean Discharge Criteria, prohibits the issuance of a permit under CWA Section 402 for a discharge into the territorial sea, the water of the contiguous zone, or the oceans except in compliance with Section 403. Permits for discharges seaward of the baseline on the territorial seas must comply with the requirements of Section 403, which include development of an Ocean Discharge Criteria Evaluation (ODCE).

The Permit requires compliance with Alaska WQS. Consistent with 40 CFR 125.122(b), adopted by reference at 18 AAC 83.010(C)(8), discharges in compliance with Alaska WQS shall be presumed not to cause unreasonable degradation of the marine environment. EPA made the connection between the similar protections provided by ODCE requirements and WQS when promulgating ocean discharge criteria rules in 1980, as stated, "the similarity between the objectives and requirements of [state WQS] and those of CWA Section 403 warrants a presumption that discharges in compliance with these [standards] also satisfy CWA Section 403." (Ocean Discharge Criteria, 45 Federal Register 65943.). As such, given the Permit requires compliance with Alaska WQS, unreasonable degradation to the marine environment is not expected and further analysis under 40 CFR 125.122 is not warranted for this permitting action.

An Ocean Discharge Criteria Evaluation (ODCE) is not required for the reissued permit. 40 CFR 125, Subpart M requires an ODCE for a point source that occurs seaward of the baseline of the territorial sea. Because Crowley, Anchorage Bulk Petroleum Storage Facility is located landward of the baseline, development of an ODCE is not required.

8.4 Permit Expiration

The Permit will expire five years from the effective date of the Permit.

9.0 References

1. Alaska Department of Environmental Conservation, *Alaska's Final 2018 Integrated Water Quality Monitoring and Assessment Report*.
2. Alaska Department of Commerce, Community, and Economic Development. Division of Economic Development. *2009 Alaska Economic Performance Report*. February 2011.
3. Alaska Department of Environmental Conservation, 2003. *Alaska Water Quality Criteria Manual for Toxics and Other Deleterious Organic and Inorganic Substances*, as amended through December 12, 2008.
4. Alaska Department of Environmental Conservation. *18 ACC 70. Water Quality Standards*, as amended through June 26, 2003.
5. Alaska Department of Environmental Conservation. *18 ACC 70. Water Quality Standards*, as amended through July 1, 2008.
6. Alaska Department of Environmental Conservation. *18 ACC 70. Water Quality Standards*, as amended through April 8, 2012.
7. Alaska Department of Environmental Conservation. *18 ACC 70. Water Quality Standards*, as amended through February 19, 2016.
8. Alaska Department of Environmental Conservation. *18 ACC 70. Water Quality Standards*, as amended through April 6, 2018.
9. Alaska Department of Environmental Conservation. *18 AAC 83. Alaska Pollutant Discharge Elimination System Program*. As amended Through October 23, 2008.
10. Alaska Department of Environmental Conservation. 18 ACC 72. Wastewater Disposal, as amended through December 23, 2009.
11. Alaska Department of Environmental Conservation, Biennial Report, Oil and Hazardous Substance Release Prevention and Response Fund, Fiscal Years 2013-2014
12. Alaska Department of Environmental Conservation. *Interim Antidegradation Implementation Methods*. Division of Water. Policy and Procedure No. 05.03.103. July 14, 2010.
13. Boveng, P.L., et al. 2012. Distribution and Abundance of Harbor Seals in Cook Inlet, Alaska. Task III: Movements, Marine Habitat Use, Diving Behavior, and Population Structure, 2004-2006. Final Report. Bureau of Ocean Energy Management, Alaska Outer Continental Shelf Region, Anchorage, Alaska, USA.
14. North Pacific Fuel-Kodiak Terminal. Oil Discharge Prevention and Contingency Plan. 4th Revision May 2019.
15. Sheldon, Kim E.W. et al. 2014 Harbor Porpoise, *Phocoena phocoena vomeria*, in Cook Inlet, Alaska. Marine Fisheries Review.
16. U.S. EPA, *Technical Support Document for Water Quality-based Toxics Control*. Office of Water, EPA/505/2-90-001, PB91-127415. Washington D.C., March 1991.
17. U.S. EPA, *Interim Guidance for Performance-Based Reduction of NPDES Monitoring Frequencies*. Office of Water, EPA 833-B-96-001, Washington D.C., April 1998.
18. United States Fish and Wildlife Service, 2013. *List of Endangered, Threatened, Proposed Candidate and Delisted Species*, May 24, 2020.

APPENDIX A - FIGURES

Figure 1: Area Map, Crowley Fuels LLC, Anchorage Bulk Petroleum Storage Facility

Figure 2: Drainage System, Crowley Fuels LLC, Anchorage Bulk Petroleum Storage Facility

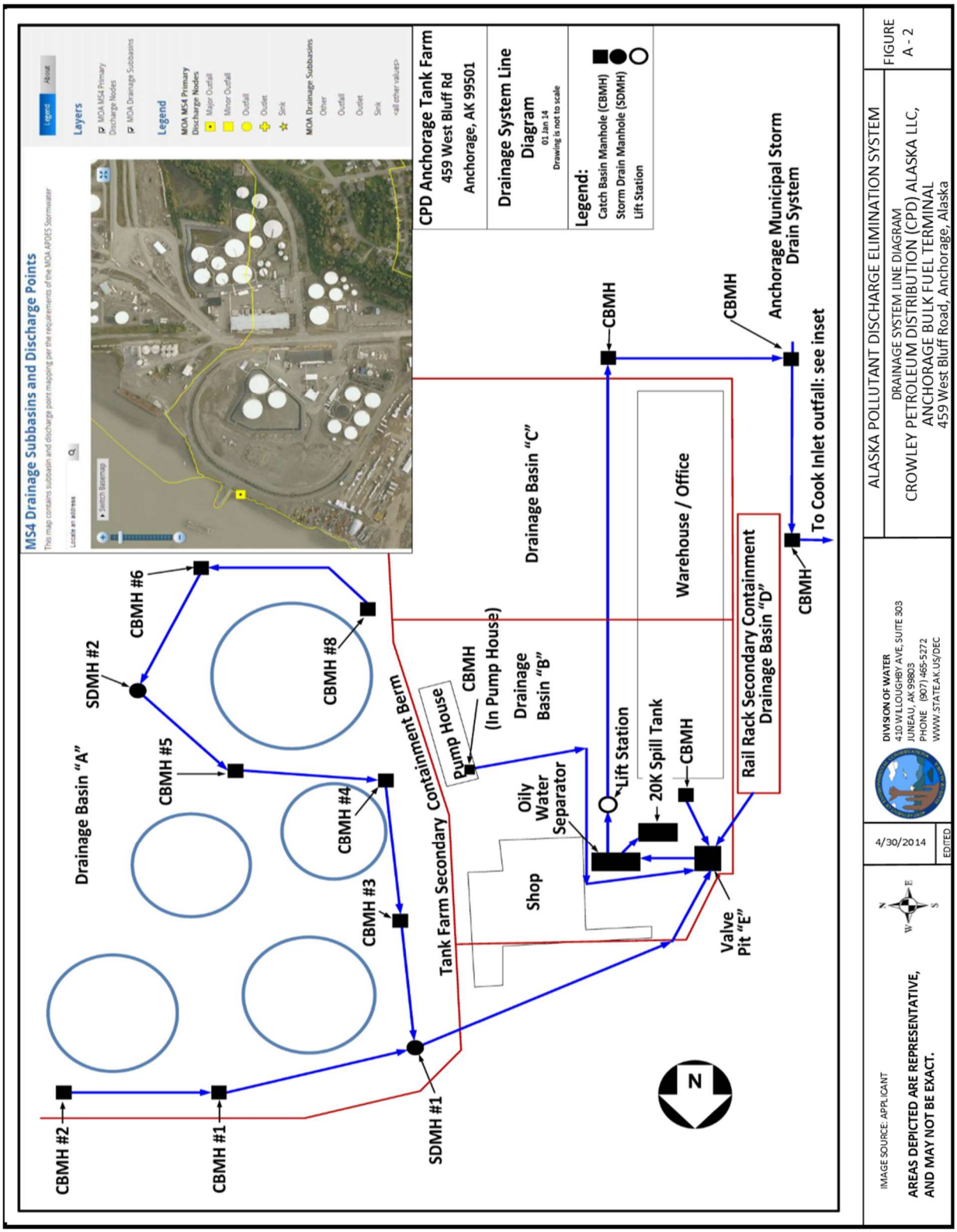

Figure 3: Groundwater Monitoring Locations, Crowley Fuels LLC, Anchorage Bulk Fuel Terminal

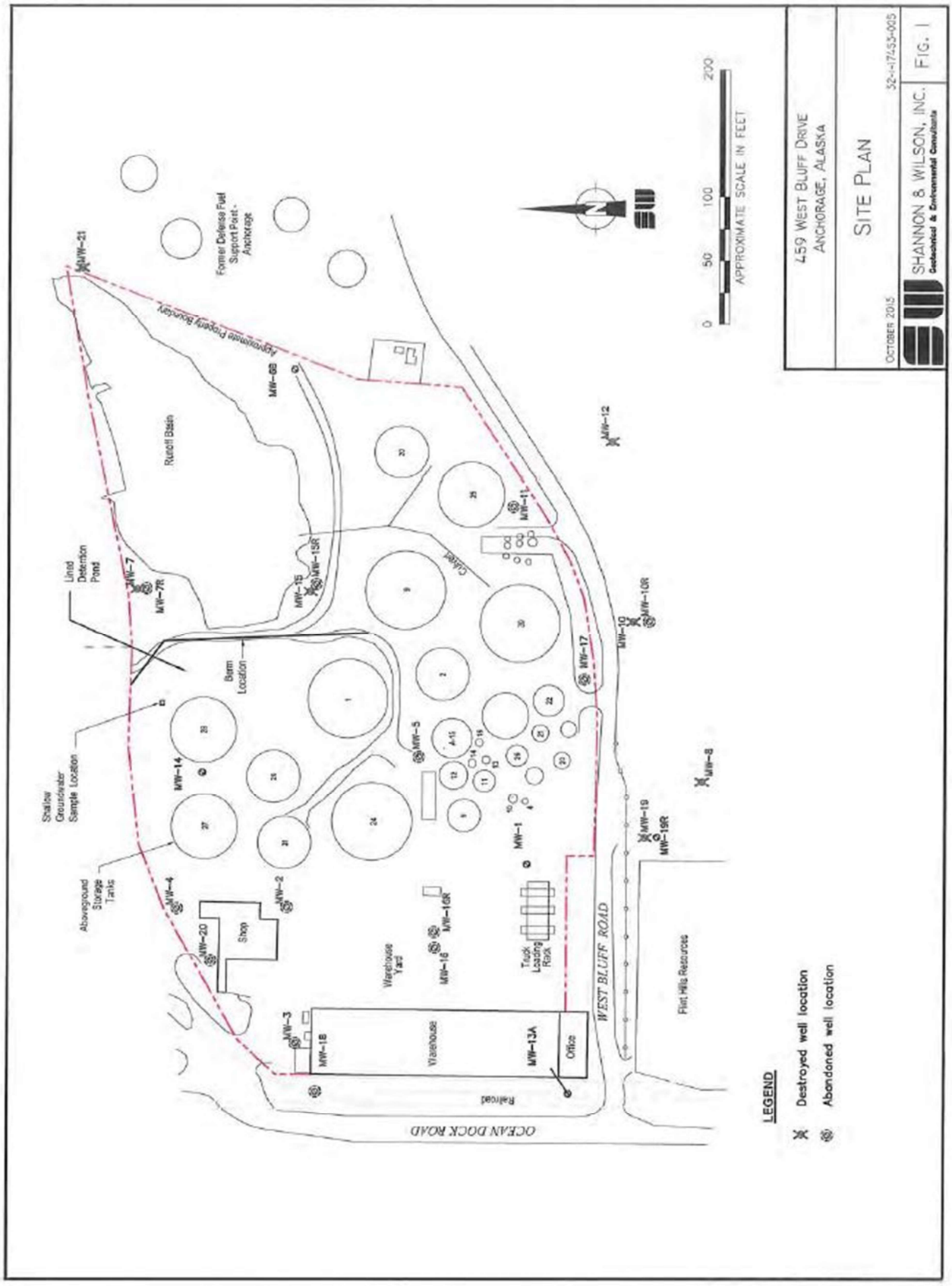

Figure 4: Tanks and Infrastructure, Anchorage Bulk Petroleum Storage Facility