EXHIBIT H

Wyoming Department of Environmental Quality
Water Quality Division
WYPDES (Wyoming Pollutant Discharge Elimination System) Program

STATEMENT OF BASIS
RENEWAL

APPLICANT NAME:	Wyoming Refining Company
MAILING ADDRESS:	10 Stampede Street Newcastle, WY 82701
FACILITY LOCATION:	Newcastle Refinery, located in the NWSW, Section 29, Township 45 North, Range 61 West, and the NWNW, Section 8, Township 44 North, Range 61 West, Weston County. Effluent discharge is to Windmill Draw (3B) and Little Oil Creek (3B), Cheyenne River Basin.
PERMIT NUMBER:	WY0001163

This permit renewal has been revised from the version that was advertised in public notice at the request of the permittee for the following reasons:

1). To remove references requiring the permittee to install fencing around their containment pond known as the 'Frog Pond', as the permittee has already fenced the Frog Pond to prevent livestock access.
2). The permit's Statement of Basis has been modified to clarify that the overflow structure related to outfall 002 has to be manually initiated.
3). Sampling for all constituents at outfall 002 that were previously established as monthly or twice monthly have been changed to 'once per discharge event' due to the infrequent and intermittent nature of outfall 002 discharges.
4). E. coli sampling at outfall 001 has been changed to 'seven times per quarter' to align with E. coli sampling requirements in other WYPDES permits with continually-discharging outfalls requiring E. coli sampling.
5). The daily maximum effluent limit for total chromium has been changed from 3.13 lbs/day to 3.53 lbs/day. This change is due to a calculation error.
6). The monthly average effluent limit for hexavalent chromium has been changed from 0.072 lbs/day to 1.01 lbs/day. This change is due to a calculation error.
7). Technology-based load limits for outfall 002 were corrected to match Table 1O in Appendix A.
8). In order to accommodate the permittee's request that all sampled and reported parameters not required to be reported at monitor point SP1 be annotated in Tables 1D and A, additional sampling and reporting requirements for all technology-based parameters originally only limited by load limits now have concentration sampling and reporting. As this sampling is necessary to calculate effluent constituent loads, this is information that the permittee is already required to collect.
9). Since outfall 002 discharges intermittently, WET test requirements in Part I.B.1 were modified to require repeat WET testing during the next outfall 002 discharge event should outfall 002 WET tests fail to achieve sufficient control survival
10). At the permittee's request, this permit's effective date has been changed from 'immediately upon issuance' to October 1, 2024 (beginning of the next reporting quarter).

This permit has been renewed in accordance with current WYPDES permitting requirements. All permit effluent limits and monitoring requirements have been updated in accordance with current WDEQ regulations and policy. Specific changes to the permit include the following:

1. *Revised language regarding access to the facility is in Part II.B.1 of the permit.*
2. *Due to compliance issues over the past permit term, the permittee is required to install a sample port (SP1) immediately downstream of their final treatment unit and prior to surface discharge into their containment unit also known as the 'Frog Pond'. Sampling shall occur at SP1 on the same day as sampling at outfall 001 and/or outfall 002 occurs, and as soon as possible after outfall sampling occurs. SP1 data shall be used during the next renewal cycle to determine if effluent concentrations of various constituents change between exiting the refinery and prior to outfall discharge.*
3. *Effluent hardness used in hardness-based metals calculations was changed to 613 mg/L, based upon effluent hardness reported in this facility's permit renewal application.*
4. *Many minor grammar, language and formatting changes were incorporated into this permit renewal in the interests of brevity and accuracy.*
5. *A reasonable potential analysis was included in this permit renewal. Based upon this analysis, many effluent limits were changed, removed, or converted to 'monitor only'.*
6. *This permit renewal also includes a summary of permit limit exceedances.*
7. *Previous permit versions did not include a chromium effluent limit, because 'this facility does not use any materials that contain chromium'. However, this may not be correct, as this facility is likely largely constructed using chrome steel. Chrome steel has the ability to shed chromium in facility wastewater discharges due to wear and/or the type of chemicals used and/or the manner that parts/sections in the facility are cleaned. As there is no wastewater chromium data available at this facility, the WYPDES Program is including chromium monitoring in this permit renewal.*
8. *Outfalls 003 and 004 have been removed from this permit at the permittee's request.*
9. *Due to this facility's past history of effluent limit violations and the large number of chemical additives utilized at this facility (see Appendix B), this permit renewal includes semi-annual Whole Effluent Toxicity (WET) testing requirements.*
10. *Also due to this facility's past history of effluent limit violations, sampling for Oil and Grease, COD, BOD5, Ammonia, Phenolic Compounds, and Selenium (total recoverable) have been increased to twice monthly. Reporting for these constituents is also increased to monthly.*

FACILITY DESCRIPTION:

Wyoming Refining Company is the owner/operator of a 20,000-bbl/day crude oil refinery located in Newcastle, Wyoming. On-site wastewater treatment facilities receive water from a Hydrodesulfization Unit (HDS Unit), a LoCAT Unit, a Naphtha Hydrotreater Unit (NHT Unit), an Alkylation Unit, a Reformer Unit, an FCC Unit, a SWAATS Unit, a BenzOUT Unit, and a Crude Unit. The permittee has indicated that the primary processes conducted at the Newcastle Refinery are topping and cracking.

The treated effluent is pumped to a containment pond located approximately two miles south of the refinery. The containment pond was originally designed to achieve "no discharge"; however, seepage from the pond has resulted in a discharge (discharge point 001) to Windmill Draw (class 3B water).

In addition, plant storm water runoff is routed to a storm water control dike located in the southwestern corner of the refinery. The control dike has an overflow structure (discharge point 002) that allows storm water runoff discharge to Little Oil Creek (class 3B water) once manually initiated.

COMPLIANCE ISSUES:

During the past permit term, this facility has had some compliance issues (see **Table 1A**). Facility personnel have indicated that they believe that some of the compliance issues are related to livestock accessing the area between outfall 001 and the containment pond, also known as the 'Frog Pond'. While the permittee has fenced the Frog

Pond to prevent livestock access, the area between the containment pond and outfall 001 has not been fenced. The WDEQ recommends that the permittee exclude livestock from the area between outfall 001 and the containment pond, or relocate outfall 001 closer to the containment pond such that outfall 001 can be included within the containment pond fencing.

Although the containment pond is not achieving the originally-intended 'no discharge' intent, the permittee believes that the containment pond is providing a degree of waste treatment prior to discharge at outfall 001. In order to validate both the amount of waste treatment being attained and the source of the compliance issues, the DEQ is requiring the permittee to install a sample port immediately downstream of the facility's final treatment unit and prior to discharge into Windmill Draw. The permittee shall sample at the sample port (SP1) at the same frequency and for the same constituents being sampled at outfalls 001 and 002. SP1 sampling shall occur on the same days outfall sampling occurs, and either immediately before or after outfall sampling is conducted. In the event outfall sampling cannot be conducted, (frozen conditions, etc.), SP1 sampling is still required.

COMPLIANCE SCHEDULE:
To allow the permittee time to, select a sample port location and install a sample port, this permit renewal contains a six-month compliance schedule. Once this permit renewal is issued, the permittee has two months to select a sample port location, and an additional four months to install it. Sample port location is subject to DEQ approval.

Table 1A – Permit Limit Exceedances, WY0001163

Outfall Number	Parameter	Monitoring Period Date	Permitted Limit Value	Limit Unit	Limit Statistical Base	Reported Value	Reported Unit
001	BOD, 5-day, 20 deg. C	5/31/2022	276	lb/d	DAILY MX	298.8	lb/d
001	BOD, 5-day, 20 deg. C	6/30/2022	153	lb/d	MO AVG	254.03	lb/d
001	BOD, 5-day, 20 deg. C	5/31/2022	153	lb/d	MO AVG	218	lb/d
001	Produced water, oil and grease	7/31/2022	10	mg/L	DAILY MX	16.5	mg/L
001	Produced water, oil and grease	9/30/2022	10	mg/L	DAILY MX	10.4	mg/L
001	Selenium, total (as Se)	11/30/2022	5	ug/L	DAILY MX	17	ug/L
001	Selenium, total (as Se)	10/31/2022	5	ug/L	DAILY MX	13	ug/L
001	Selenium, total (as Se)	8/31/2022	5	ug/L	DAILY MX	12	ug/L
001	Selenium, total (as Se)	9/30/2022	5	ug/L	DAILY MX	12	ug/L
001	Selenium, total (as Se)	6/30/2022	5	ug/L	DAILY MX	9	ug/L
001	Selenium, total (as Se)	7/31/2022	5	ug/L	DAILY MX	9	ug/L

Table 1A – Permit Limit Exceedances, WY0001163							
Outfall Number	**Parameter**	**Monitoring Period Date**	**Permitted Limit Value**	**Limit Unit**	**Limit Statistical Base**	**Reported Value**	**Reported Unit**
001	Selenium, total (as Se)	5/31/2022	5	ug/L	DAILY MX	8	ug/L
001	Selenium, total (as Se)	3/31/2022	5	ug/L	DAILY MX	6	ug/L
001	Sulfide, total (as S)	6/30/2022	0.81	lb/d	MO AVG	85.59	lb/d
001	Sulfide, total (as S)	6/30/2022	1.81	lb/d	DAILY MX	85.59	lb/d
001	Sulfide, total (as S)	5/31/2022	0.81	lb/d	MO AVG	34.13	lb/d
001	Sulfide, total (as S)	5/31/2022	1.81	lb/d	DAILY MX	34.13	lb/d
001	Sulfide, total (as S)	9/30/2021	1.81	lb/d	DAILY MX	4.35	lb/d
001	Sulfide, total (as S)	9/30/2021	0.81	lb/d	MO AVG	3.33	lb/d
001	Sulfide, total (as S)	9/30/2022	0.81	lb/d	MO AVG	1.31	lb/d
001	Sulfide, total (as S)	7/31/2022	0.81	lb/d	MO AVG	1.19	lb/d
002	BOD, 5-day, 20 deg. C	5/31/2018	20	lb/d	MO AVG	851	lb/d
002	BOD, 5-day, 20 deg. C	5/31/2018	37	lb/d	DAILY MX	851	lb/d
002	Carbon, tot organic (TOC)	3/31/2022	110	mg/L	DAILY MX	250	mg/L
002	Chemical Oxygen Demand (COD)	5/31/2018	140	lb/d	MO AVG	1,623	lb/d
002	Chemical Oxygen Demand (COD)	5/31/2018	280	lb/d	DAILY MX	1,623	lb/d
002	Produced water, oil and grease	3/31/2022	10	mg/L	DAILY MX	19.6	mg/L
002	Solids, total suspended	5/31/2018	16	lb/d	MO AVG	23,385	lb/d
002	Solids, total suspended	5/31/2018	26	lb/d	DAILY MX	23,385	lb/d

REASONABLE POTENTIAL ANALYSIS: The following pollutants have been determined to have the potential to occur in this facility's effluent discharge (see **Table 1B):**

Table 1B: Reasonable Potential Analysis

Parameter	Aquatic Life Standards	Most Stringent TBEL[4,7]	Reported Highest Effluent Concentration	Effluent Data Source	Sample Period of Record and Number of Samples Reported	Reasonable Potential Analysis Results
Chromium III, dissolved	230.7[5,6] µg/L, WWQRR[1], Chapter 1	No TBEL limits	4 µg/L	Permit renewal application	1 sample, 9/20/2022	No limit required, maximum effluent concentration less than half of most stringent limit. Monitoring only.
Chromium, hexavalent	16.0[5,6] µg/L, WWQRR[1], Chapter 1	0.24 lbs/day, daily max., 0.077 lbs/day, monthly avg.	Never sampled due to conditional sampling permit requirements	DMR data	185 non-sampled events, 2018-2023	No data, conditional load monitoring and limits and non-conditional water-quality-based limits included in permit renewal
Chromium, total	No aquatic life standards	3.23 lbs/day, daily max., 1.27 lbs/day, monthly avg., CFR[2].419.22	Never sampled due to conditional sampling permit requirements	DMR data	123 non-sampled events, 2018-2023	No data, conditional monitoring and limits included in permit renewal
Oil and Grease	10 mg/L, WWQRR[1], Chapter 1	78.5 lbs/day, daily max., 41.8 lbs/day, monthly avg., CFR[2].419.22	16.5 mg/L	DMR data	142 samples, 2018-2023	Exceeds aquatic life standard, limit required.
COD	No aquatic life standards	1,931.1 lbs/day, daily max, 1,000.9 lbs/day, monthly avg. 40 CFR[2].419.22	1623 lbs/day	DMR data	101 samples, 2018-2023	Effluent concentration close to most stringent limit, limit required
BOD5	No aquatic life standards	258.4 lbs/day, daily max, 143.4 lbs/day, monthly avg. 40 CFR[2]. 419.22	851 lbs/day	DMR data	105 samples, 2018-2023	Exceeds most stringent standard or limit, limit required.
Ammonia	No ammonia standards for class 3 streams	167.0 lbs/day, daily max, 75.9 lbs/day, monthly avg. 40 CFR[2]. 419.22	82.94 lbs/day	DMR data	97 samples, 2018-2023	Effluent concentration exceeds most stringent limit, limit required.

Table 1B: Reasonable Potential Analysis						
Parameter	**Aquatic Life Standards**	**Most Stringent TBEL[4, 7]**	**Reported Highest Effluent Concentration**	**Effluent Data Source**	**Sample Period of Record and Number of Samples Reported**	**Reasonable Potential Analysis Results**
Phenolic compounds	No aquatic life standards	1.87 lbs/day, daily max, 0.94 lbs/day, monthly avg. 40 CFR[2].419.22	0.98 lbs/day	DMR data	93 samples, 2018-2023	Exceeds most stringent standard or limit, limit required.
Phosphorus	No aquatic life standards	No TBEL limits	0.763 mg/L	Permit renewal application	1 sample, 9/20/2022	No official standard, no limit, monitoring only
Sulfate	No aquatic life standards	3,000 mg/L, WWQRR[1], Chapter 2	1,160 mg/L	Permit renewal application	1 sample, 9/20/2022	No limit required, maximum effluent concentration less than half of most stringent limit. Monitoring only
Surfactants	No aquatic life standards	No TBEL limits	1.0 mg/L	Permit renewal application	1 sample, 9/20/2022	No limit required, receiving stream not a drinking water source or fishery.
TOC	No aquatic life standards	No aquatic life limits	34.8 mg/L	Permit renewal application	1 sample, 9/20/2022	No limit required, receiving stream not a drinking water source or fishery. Monitoring only.
Nitrogen	No aquatic life standards	No TBEL limits	32.7 mg/L	Permit renewal application	1 sample, 9/20/2022	No limit required, receiving stream not a drinking water source or fishery. Monitoring only
E. Coli	126 MPN/ 100 mL, WWQRR[1], Chapter 1	No TBEL limits	115 MPN/100 mL	Permit renewal application	1 sample, 9/20/2022	Effluent concentration close to most stringent limit, limit required.
TSS	Narrative, WWQRR[1], Chapter 1	190.1 lbs/day, daily max, 114.8 lbs/day monthly average CFR[2].419.22	55.0 mg/L (35.7 lbs/day)	Permit renewal application	1 sample, 9/20/2022	Reported concentrations within limits, limits required by CFR[2].419.22
Selenium	5.0 µg/L, WWQRR[1], Chapter 1	No TBEL limits	17 mg/L	DMR data	51 samples, 2018-2023	Highest reported concentration well above most stringent limit, limit required.

Table 1B: Reasonable Potential Analysis						
Parameter	**Aquatic Life Standards**	**Most Stringent TBEL[4,7]**	**Reported Highest Effluent Concentration**	**Effluent Data Source**	**Sample Period of Record and Number of Samples Reported**	**Reasonable Potential Analysis Results**
Sulfide	2 µg/L, WWQRR[1], Chapter 1	1.64 lbs/day, daily max, 0.73 lbs/day, monthly avg. CFR[2].419.22	85.59 lbs/day (1,820 µg/L)	DMR data	97 samples, 2018-2023	Highest reported concentration well above most stringent limit, limit required.
Fluoride	No aquatic life limits	No TBEL limits	50.0 mg/L	Permit renewal application	1 sample, 9/20/2022	No limits, receiving stream not a drinking water source or fishery.
Benzene	No aquatic life limit	No TBEL limits	<2.50 µg/L	Permit renewal application	1 sample, 9/20/2022	No limit required, receiving stream not a drinking water source or fishery.
Dissolved Nickel	2171.0 µg/L, daily max, 241.1 µg/L, monthly avg. WWQRR[1], Chapter 1	No TBEL limits	24.0 µg/L	Permit renewal application	1 sample, 9/20/2022	No limit required, maximum effluent concentration less than half of most stringent limit.
Dissolved Zinc	544.6 µg/L, daily max, 549.0 µg/L, monthly avg. WWQRR[1], Chapter 1	No TBEL limits	<50 µg/L	Permit renewal application	1 sample, 9/20/2022	No limit required, maximum effluent concentration less than half of most stringent limit.
Acrolein	3 µg/L, WWQRR[1], Chapter 1	No TBEL limits	<100 µg/L	Permit renewal application	1 sample, 9/20/2022	Limit required, likely that most stringent limit exceeded.
Arsenic, dissolved	150 µg/L, WWQRR[1], Chapter 1	No TBEL limits.	12 µg/L	Permit renewal application	1 sample, 9/20/2022	No limit required, maximum effluent concentration less than half of most stringent limit. Monitoring only

[1]Wyoming Water Quality Rules and Regulations, Chapter 1
[2]Code of Federal Regulations.
[3]Best Professional Judgement.
[4]Technology-Based Effluent Limit.
[5]Toxicity is hardness based, calculated using a maximum effluent hardness of 400 mg/L, as per *Wyoming Water Quality Rules and Regulations, Chapter 1, Appendix F.*

[6]Daily maximum standards represent acute aquatic life standards, monthly average standards represent chronic aquatic life standards.
[7]Process-based wastewater effluent limits are multiplied for each 1000 barrels of feedstock used at the facility (outfall 001). Contaminated storm water runoff discharges (outfall 002) are different and are multiplied for each 1000 gallons discharged. The load-based limits in **Table 1B** represent summed loads for outfall 001 + outfall 002.

MONITOR ONLY REQUIREMENTS: In determining which constituents do not require effluent limits but do require monitoring and reporting, the following factors were considered:

Parameter toxicity – Arsenic,
Used as marker for toxic effluent conditions – Phenolic compounds, TOC, COD, nitrogen, phosphorus
No facility data, but a common petroleum refinery pollutant – total chromium,
Limited data indicates parameter not an issue at this facility, however, it is a common pollutant in petroleum refinery discharges – TSS and sulfate.

EFFLUENT LIMITS: In developing effluent limits, all federal and state regulations and standards are considered, the most stringent requirements are incorporated into the permit. Permit limits are either technology-based or water-quality-based, as described below.

The permit requires immediate compliance with Best Practical Control Technology (BPT) and Best Available Technology (BAT) limits defined in the EPA Effluent Guidelines and Standards for Petroleum Refining Point Source Category, Cracking Subcategory, 40 CFR 419, Subpart B. In addition, aquatic life standards for constituents of concern are evaluated to ensure that water-quality standards are not violated. Technology-based and water-quality based effluent limits are then compared, the most stringent limits are established in the permit.

This facility uses, on average, 20,000 barrels per day of crude oil feedstock.

TECHNOLOGY-BASED-LIMITS:
REFINERY PROCESS WASTEWATER AND CONTAMINATED STORM WATER (Sum of outfall 001 + 002 discharges) EPA Effluent Guidelines and Standards for Petroleum Refining Point Source Category, Cracking Subcategory, 40 CFR 419, Subpart B, establishes effluent limits, based upon Best Practicable Technology (BPT) and Best Available Technology (BAT) for petroleum refinery process wastewater discharges. Effluent limits are calculated based on production and/or process feedstock amounts, as described in the Statement of Basis, **Appendix A**. The permittee shall monitor both outfalls 001 and 002 for the following constituents, and report the sum of both outfall discharges under the monitoring point 'SUM". The following technology-based effluent limits apply at this facility:

- Five-Day Biochemical Oxygen Demand (BOD_5)- 258.4 lbs/day, daily maximum, 143.4 lbs/day, monthly average,
- Chemical Oxygen Demand (COD) – 1,931.1 lbs/day, daily maximum, 1,000.9 lbs/day, monthly average,
- Phenolic Compounds – 1.87 lbs/day, daily maximum, 0.94 lbs/day, monthly average,
- Total Suspended Solids (TSS) – 180.1 lbs/day, daily maximum, 114.8 lbs/day, monthly average,
- Oil and Grease – 78.5 lbs/day, daily maximum, 41.8 lbs/day, monthly average,
- Ammonia as N – 167.0 lbs/day, daily maximum, 75.9 lbs/day, monthly average,
- Sulfide – 1.64 lbs/day, daily maximum, 0.73 lbs/day, monthly average,
- Total Chromium – 3.23 lbs/day, daily maximum, 1.27 lbs/day, monthly average,
- Hexavalent Chromium – 0.24 lbs/day, daily maximum, 0.077 lbs/day, monthly average,
- pH – Effluent samples shall remain within the range of 6.0 to 9.0 standard units.

WATER-QUALITY- BASED EFFLUENT LIMITS:

REFINERY PROCESS WASTEWATER (Outfalls 001 and 002): Because the receiving streams are classified as 3B, effluent limits shall be established that consider aquatic life protection. Zero dilution is assumed, so effluent limits are established equal to the instream standards. *Wyoming Water Quality Rules and Regulations, Chapter 1* establishes water-quality-based effluent limits for the following constituents:

- Chromium VI - 16 ug/L, daily maximum,
- pH - Effluent samples shall remain within the range of 6.5 to 9.0 standard units. Note that the water-quality-based pH effluent limit is more stringent than the technology-based pH limit, and will therefore be established as this facility's end-of-pipe effluent limit.
- Oil and Grease, 10 mg/L, daily maximum. This limit applies in addition to the technology-based oil and grease limits established above.
- E. coli bacteria – 410 MPU/100 mL (May-September, daily maximum), and 126 MPU/100 mL, monthly average. For the October-April time period, the monthly average and daily maximum E. coli limits are 630 MPU/100 mL. **See Table 1C,**
- Selenium, total recoverable – 5 µg/L, daily maximum,

Because this facility discharges to an ephemeral waterbody that's normally dry and therefore has no available dilutional flow, limits established in this permit do not consider available dilution.

E. coli: See highlighted sections within **Table 1C**. E. coli standards are based upon *Wyoming Water Quality Rules and Regulations, Chapter 1.*

Table 1C: E. coli Bacteria Standards, In Waters Designated for Primary Contact Recreation

May through September			October through April
Monthly Average Standard	**Daily Maximum Standards**	**Criteria**	**Monthly Average and Daily Maximum**
126 colonies/100 mL	235 colonies/100 ml	High-Use Swimming Areas	630 colonies/100 mL
	298 colonies/100 mL	Moderate Full-Body Contact	
	410 colonies/100 mL	Lightly-Used Full-Body Contact	
	576 colonies/100 mL	Infrequently-Used Full-Body Contact	

STORM WATER DISCHARGES (Outfall 002): According to the Effluent Guidelines and Standards, if wastewater consists solely of runoff not commingled or treated with process wastewater, it may be discharged with no load limits if it does not exceed 15 mg/L oil and grease and 110 mg/L total organic carbon (TOC). If the wastewater consists solely of runoff not commingled or treated with process wastewater, and it exceeds 15 mg/L oil and grease and 110 mg/L total organic carbon (TOC), it may still be surface discharged provided it does not exceed the load limits calculated and established in this permit in accordance with 40 CFR Part 419.22(e). In addition, the permit establishes a limit and monitoring requirements for pH and flow. These limits and monitoring requirements are based upon Best Professional Judgment. The water-quality based standard for oil and grease, per Chapter 1, Wyoming Water Quality Rules and Regulations, is 10 mg/L. This is more stringent than the technology based limit of 15 mg/L, so the 10 mg/L effluent limit will be included in the permit for outfall 002. Due to the above restrictions, this facility is prohibited from discharging any process wastewater flows at outfall 002.

WHOLE EFFLUENT TOXICITY:

Because the Newcastle Refinery has had numerous effluent limit violations, and also due to the large number of

chemical additives used at this facility, WDEQ has determined that semi-annual WET testing is appropriate. This permit renewal includes effluent limits for whole effluent toxicity (WET) for acute toxicity only. Chronic toxicity testing is not required due to the intermittent and low-volume nature of this facility's discharge, and also due to the location of this facility's discharge and the long distance needed for their effluent to travel before it reaches a class 2 drainage. To attain a passing WET test, the permittee shall pass at 100% effluent (no dilution), due to the fact that this facility discharges to a class 3B drainage that usually has no dilutional flow.

ANTIDEGRADATION, IMPAIRMENT REVIEW: Effluent limits established in this permit have been reviewed to ensure receiving water quality necessary to protect designated uses within the receiving waters is maintained and protected. DEQ staff conducted an antidegradation review that verifies that permit conditions and established effluent limitations provide a level of receiving water protection consistent with the state of Wyoming's antidegradation provisions and surface water quality standards. The antidegradation evaluation also ensured that this facility's immediate receiving water has not been listed on the 303(d) list as a waterbody that cannot support designated uses. The evaluation has revealed that the receiving water is not included on this list.
See **Table 1D** for a summary of all facility effluent limits, sampling and monitoring requirements, and required sample types. Note that this is only a summary, for more information see Part I, **Tables A and B** of the permit.

Table 1D: Established Effluent Limits, Required Reporting Units, Sample Schedules, Reporting Schedules, and Sample Types, WY0001163 – Newcastle Refinery, Outfall 001 and Monitoring Point SP1[6]

Limited Parameter and Required Reporting Units	Effluent Limits		Sampling Schedule	Reporting Schedule	Required Sample Type
	Monthly Average[(5)]	Daily Maximum			
Effluent Discharge Duration[(3,4)], days/month	Report	N/A	Daily	Monthly	Report
Ammonia[4] (as N), lbs/day	83.5	183.8	Twice Monthly	Monthly	Grab
Biochemical Oxygen Demand, Five-Day (BOD_5), mg/L	Report	Report	Twice Monthly	Monthly	Grab
Biochemical Oxygen Demand, Five-Day[4] (BOD_5), lbs/day	153.2	275.7	Twice Monthly	Monthly	Grab
Chemical Oxygen Demand (COD), mg/L	Report	Report	Twice Monthly	Monthly	Grab
Chemical Oxygen Demand[4] (COD), lbs/day	1,069.3	2,060.6	Twice Monthly	Monthly	Grab
Oil and Grease, mg/L	Report	10 mg/L	Twice Monthly	Monthly	Grab
Oil and Grease[4], lbs/day	44.6	83.5	Twice Monthly	Monthly	Grab
Phenolic Compounds, mg/L	Report	Report	Twice Monthly	Monthly	Grab
Phenolic Compounds[4], lbs/day	1.0	2.06	Twice Monthly	Monthly	Grab
Selenium, Total Recoverable, µg/L	N/A	5 µg/L	Twice Monthly	Monthly	Grab
Chromium, Hexavalent, µg/L	N/A	16	Monthly	Quarterly	Grab
Chromium[(7)], Hexavalent[4], lbs/day	0.101	0.23	Monthly	Quarterly	Grab
Chromium[(7)], Total, µg/L	Report	Report	Monthly	Quarterly	Grab
Chromium[(7)], Total[4], lbs/day	1.23	3.53	Monthly	Quarterly	Grab

Table 1D: Established Effluent Limits, Required Reporting Units, Sample Schedules, Reporting Schedules, and Sample Types, WY0001163 – Newcastle Refinery, Outfall 001 and Monitoring Point SP1[6]					
Limited Parameter and Required Reporting Units	**Effluent Limits**		**Sampling Schedule**	**Reporting Schedule**	**Required Sample Type**
	Monthly Average[5]	**Daily Maximum**			
Chromium[2], Trivalent, Dissolved, µg/L	N/A	Report	Monthly	Quarterly	Grab
Effluent Discharge Volume[4], MGD	Report	Report	Monthly	Quarterly	Instantaneous or Continuous
Organic Carbon, Total, mg/L	N/A	Report	Monthly	Quarterly	Grab
pH[1], standard units	All effluent samples shall remain within the range of 6.5-9.0 s. u.		Monthly	Quarterly	Grab (Field Measurement)
Sulfide, Total (as S), mg/L	Report	Report	Monthly	Quarterly	Grab
Sulfide, Total (as S)[4], lbs/day	0.81	1.81	Monthly	Quarterly	Grab
Total Suspended Solids, mg/L	Report	Report	Monthly	Quarterly	Grab
Total Suspended Solids[4], lbs/day	122.5	192.1	Monthly	Quarterly	Grab
E. coli bacteria, MPD/ 100 mL, May-September	126	410	Seven times per quarter[8/]	Quarterly	Grab
E. coli bacteria, MPD/ 100 mL, October-April	630	630	Seven times per quarter[8]	Quarterly	Grab
Whole Effluent Toxicity Testing, acute[4]	See Part I.B.1.	Must pass @ 100% effluent	Semi-Annual	Semi-Annual	Grab
Acrolein, µg/L	N/A	Report	Annually	Annually	Grab
Arsenic, µg/L	N/A	Report	Annually	Annually	Grab
Nitrogen, total, mg/L	N/A	Report	Annually	Annually	Grab
Phosphorus, mg/L	N/A	Report	Annually	Annually	Grab
Sulfate, mg/L	N/A	Report	Annually	Annually	Grab

SP1's provisional location is in the SWSW, Section 29, Township 45 North, Range 61 West.

[1]All effluent pH samples shall remain within the range of 6.5-9.0 standard units.
[2]Hardness dependent, based upon effluent hardness of 613 mg/L (as CaCO3).
[3]For the parameter 'Effluent Discharge Duration' ONLY, the permittee is required to report the total number of days per month that this facility had outfall discharges at each outfall.
[4]Monitoring and reporting for this parameter is not required at monitoring point SP1.
[5] If the facility discharges for three (3) days or less during any calendar month, the no discharge code of "Less than 3 days of discharge; Avg not applicable" may be used for monthly average in place of a numerical value in Discharge Monitoring Reports (DMRs). In such cases, daily maximum sampling and reporting is still required.
[6]Monitoring Point SP1 shall be sampled, analyzed, and results reported as established in **Table 1D**. Effluent limits established in **Table 1D** do not apply to monitoring point SP1.

[7]Conditional monitoring. Monitoring is not required for this constituent unless the permittee is using compounds or chemicals at Newcastle Refinery that contain chromium.

Prior to commencing discharges from outfall 002, the permittee shall collect and analyze grab samples for total organic carbon (TOC) concentrations. If the stormwater held in any stormwater containment unit exceeds 110 mg/L TOC, then all effluent limits established in **Table 1E** apply. Should stormwater contained within any stormwater containment unit measure 110 mg/L TOC or less, the load-based effluent limits (limits expressed in lbs/day) established in **Table 1E** do not apply, only water-quality-based effluent limits (limits denoted in **Table 1B** with a [6] superscript in the 'Aquatic Life Standards' column) apply in cases where stormwater contained within any stormwater containment unit proposed for discharge measure 110 mg/L or less for TOC. TOC measurements shall be obtained within 30 days of discharge.

Table 1E: Established Effluent Limits, Required Reporting Units, Sample Schedules, Reporting Schedules, and Sample Types, WY0001163 – Newcastle Refinery, Outfall 002

Limited Parameter and Required Reporting Units	Effluent Limits		Sampling Schedule [6]	Reporting Schedule	Required Sample Type
	Monthly Average[4]	Daily Maximum			
Effluent Discharge Duration[3], [5], days/month	Report	N/A	Daily	Monthly	Report
Biochemical Oxygen Demand, Five-Day (BOD_5), lbs/day	20.2	36.75	Once per discharge event	Monthly	Grab
Chemical Oxygen Demand (COD), lbs/day	137.8	275.6	Once per discharge event	Monthly	Grab
Oil and Grease[5], mg/L	Report	10 mg/L	Once per discharge event	Monthly	Grab
Oil and Grease, lbs/day	6.16	11.95	Once per discharge event	Monthly	Grab
Phenolic Compounds, lbs/day	0.13	0.27	Once per discharge event	Monthly	Grab
Selenium[5], Total Recoverable, µg/L	N/A	5 µg/L	Once per discharge event	Monthly	Grab
Chromium, Hexavalent[5], µg/L	N/A	11	Once per discharge event	Quarterly	Grab
Chromium[7], Hexavalent, lbs/day	0.021	0.048	Once per discharge event	Quarterly	Grab
Chromium[7], Total, lbs/day	0.17	0.46	Once per discharge event	Quarterly	Grab
Chromium[2] [5], Trivalent, Dissolved, µg/L	N/A	Report	Once per discharge event	Quarterly	Grab
Effluent Discharge Volume[5], MGD	Report	Report	Once per discharge event	Quarterly	Instantaneous or Continuous
Organic Carbon[5], Total, mg/L	N/A	Report	Once per discharge event	Quarterly	Grab
pH[1], [5], standard units	All effluent samples shall remain within the range of 6.5-9.0 s. u.		Once per discharge event	Quarterly	Grab (Field Measurement)
Total Suspended Solids, lbs/day	16.5	25.7	Once per discharge event	Quarterly	Grab
Whole Effluent Toxicity Testing[5], acute	See Part I.B.1.	Must pass @ 100%	Semi-Annual	Semi-Annual	Grab

Table 1E: Established Effluent Limits, Required Reporting Units, Sample Schedules, Reporting Schedules, and Sample Types, WY0001163 – Newcastle Refinery, Outfall 002					
Limited Parameter and Required Reporting Units	**Effluent Limits**		**Sampling Schedule [6]**	**Reporting Schedule**	**Required Sample Type**
	Monthly Average[4]	**Daily Maximum**			
		effluent			
Acrolein, µg/L	N/A	Report	Annually	Annually	Grab
Arsenic, µg/L	N/A	Report	Annually	Annually	Grab
Nitrogen, total, mg/L	N/A	Report	Annually	Annually	Grab
Phosphorus, mg/L	N/A	Report	Annually	Annually	Grab
Sulfate, mg/L	N/A	Report	Annually	Annually	Grab

[1]All effluent pH samples shall remain within the range of 6.5-9.0 standard units.
[2]Hardness dependent, based upon effluent hardness of 613 mg/L (as CaCO3).
[3]For the parameter 'Effluent Discharge Duration' ONLY, the permittee is required to report the total number of days per month that this facility had outfall discharges at each outfall.
[4] If the facility discharges for three (3) days or less during any calendar month, the no discharge code of "Less than 3 days of discharge; Avg not applicable" may be used for monthly average in place of a numerical value in Discharge Monitoring Reports (DMRs). In such cases, daily maximum sampling and reporting is still required.
[5]Sampling and reporting for these constituents is required regardless of stormwater TOC concentrations. In the event stormwater proposed for discharge contains more than 110 mg/L TOC, the permittee is required to sample for and report values for all constituents listed in **Table 1E**. In the event sampling and reporting is not required during a stormwater discharge event for load-based constituents, the permittee shall report 'conditional monitoring, sampling not required' in their discharge monitoring reports for those constituents.
[6]Sampling is only required when discharges from outfall 002 occur. The permittee shall sample each and every discharge occurrence from outfall 002 at least once, regardless of duration or prior sampling frequency. If no discharges from outfall 002 occur during any sampling period, the permittee shall report 'no discharge'. For instance, if outfall 002 discharges occur on three different days during any two-week sampling period, the permittee shall collect three separate samples, one for each discharge occurrence. The results from these three separate sample events shall then be averaged with any sample results obtained during the second monthly two-week period to obtain a monthly average for each sampled constituent. These monthly averages shall then be reported on the monthly discharge monitoring reports.
[7]Conditional monitoring. Monitoring is not required for this constituent unless the permittee is using compounds or chemicals at Newcastle Refinery that contain chromium.

SPECIAL CONDITION #1: In 1990, DEQ established the following policy regarding chromium monitoring at this facility:

1. Chromium effluent limitations will be retained in the permit as required by the EPA regulations;
2. Wyoming Refining is not required to monitor for chromium unless the company begins using chromium-based compounds in their process;
3. WDEQ will monitor the discharge for chromium compounds whenever compliance monitoring is performed by this agency.

Note: EPA regulations regarding chromium monitoring at this facility only cover technology-based effluent limits (those limits measured in lbs/day). The permittee is still required to monitor for chromium to demonstrate compliance with water-quality-based chromium limits established by WDEQ as per *Wyoming Water Quality Rules and Regulations, Chapter 1.*

SPECIAL CONDITION #2: This discharge permit was originally issued pursuant to the Second Stipulation of the Parties filed in May 1985 in the District Court, First Judicial District, in and for Laramie County, Wyoming, Docket No. 85-108, and modified Consent Decree entered by Judge Joseph F. Maier in that matter. It is recognized that the District Court retains continuing jurisdiction over this matter.

The permit establishes effluent limits for the end of pipe, that are protective of the designated uses for class 3B waters as defined in *Chapter 1 of Wyoming Water Quality Rules and Regulations*. These include aquatic life other than fish, recreation, agriculture, wildlife, industry and scenic value. Water quality based effluent limits for this permit are based on standards intended to protect for the above-listed designated uses and reflect application of "tier 1" antidegradation protection. Tier 1 antidegradation protection is the basic level of protection applied to all waters of the state, as described in *Wyoming Surface Water Quality Standards Implementation Policies for Antidegradation, Mixing Zones and Dilution Allowances, Turbidity, and Use Attainability Analysis*, effective September 24, 2013.

Anti-Backsliding Provision: This permit originally established an end-of-pipe dissolved chromium III limit of 230.7 µg/L. Based upon information submitted with the permit renewal, total chromium concentrations at this facility were reported at a maximum of 4 µg/L. Since the previously-established limit is far below reported concentrations, the WDEQ has determined that it is reasonable to change this limit to 'report only'. In addition, production-based limits calculated in the previous permit for BOD_5, COD, oil and grease, phenolic compounds, hexavalent chromium, total chromium, and TSS were slightly more stringent than those calculated in this permit renewal, likely the result of rounding errors and minor miscalculations. WDEQ has determined that removing this facility's dissolved chromium III limit and establishing slightly less stringent production-based limits for BOD5, COD, oil and grease, phenolic compounds, hexavalent chromium, total chromium, and TSS conforms to anti-backsliding requirements established in *Section 402(o).2.B.i of the Clean Water Act.*

Effluent quality and quantity self-monitoring is required on a regular basis, results shall be reported to WDEQ as established in **Tables A and B** of the attached permit. This permit renewal is scheduled to expire on July 31, 2029.

Kathy Shreve
Water Quality Division
Department of Environmental Quality
Revised: August 27, 2024