Wynnewood Part B Reapplication

40 CFR §270.14, Part B Permit Application

Wynnewood Refinery

Garvin County, Oklahoma

January 2017 (Revised June 2017)

PREPARED FOR:

Wynnewood Refining Company, LLC

Wynnewood, Oklahoma

SPIRIT PROJECT: 16471.00A

FOR SPIRIT ENVIRONMENTAL:

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1.0 Introduction

1.1 Application Purpose and Scope: §270.10(h)

Wynnewood Refining Company, LLC ("WRC") operates one (1) hazardous waste storage tank, Tank 2007 ("T-2007") and one (1) closed stormwater retention pond ("SWRP") under Resource Conservation and Recovery Act ("RCRA") Operations and Post-Closure Permit 000396549 issued May 30, 2007. That permit has a ten-year term with an expiration date of May 30, 2017. A copy of that permit is included in Attachment 1 to this Application. This document is a renewal application for that existing permit.

The scope of this reapplication is to extend the operation of hazardous waste storage T-2007 as well as to extend the post-closure care for the closed SWRP. The operation of T-2007 will continue as is for the long-term (i.e., greater than 90 days) storage of hazardous waste removed from the Facility's oil/water separators and dissolved air flotation ("DAF") units. The SWRP was certified closed on June 21, 1994 with waste stabilized in place. The SWRP continues to require post-closure care in a manner consistent with the current permit. WRC is requesting that the post-closure care of the SWRP be incorporated into a corrective action section of the renewed permit that also incorporates relevant on-going implementation of the Comprehensive Remediation Plan ("CRP") and Performance Monitoring Plan ("PMP") sections of the RCRA Consent Order 15-056, a copy of which is included in Attachment 2 to this Application.

All other hazardous waste handled at WRC is shipped off-site to an approved treatment, storage and disposal facility within 90 days from date of generation. As such, those units are not included in this reapplication.

1.2 Application Format

This Application incorporates many of the supporting documents from the 2005 renewal application. Those documents are organized in a manner consistent with 40 CFR Part 270, which is incorporated by reference into Title 252, Department of Environmental Quality Chapter 205, Hazardous Waste Management Regulations.

1.3 Application Submittal

An extension to the submittal due date of this Application was requested by WRC via email dated November 15, 2016 and via letter dated November 17, 2016 and approved by the Oklahoma Department of Environmental Quality ("ODEQ") on December 7, 2016. The new submittal due date is January 30, 2017. ODEQ's approval of that extension is included in Attachment 3 to this Application.

2.0 Recordkeeping

Records of all data used to complete this Application, including supplemental information submitted under §§270.10(d), 270.13, 270.14 through 270.21, shall be maintained by WRC for a period of at least three (3) years from the date this Application is signed.

3.0 Certification

3.1 Authorization: §270.11(b)

As allowed by this section and certified below, I, Alex Coles, hereby specify that the person in the position of Complex Environmental Manager at Wynnewood Refining Company, LLC is my duly authorized representative for signing all reports required by the permit and other information requested by the Director, except for any groundwater monitoring report required by the permit, which shall be submitted by a qualified groundwater geologist or engineer. At the time of this application, the persons in these positions are Curtis Miles, the Complex Environmental Manager, and Sam A. McCormick, WRC's qualified groundwater geologist.

3.2 Certification: §270.11(d)(1)

Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Date: _____

Name and Title: Alex Coles, Vice President & GM Refining

Signature: _____

4.0 Application Forms:

4.1 Part A Permit Application: §270.13

An updated Part A Permit Application is included in in Appendix A of this Application.

5.0 General Information Requirements

5.1 General Description of Facility: §270.14(b)(1)

WRC operates a petroleum refinery located in Wynnewood, Garvin County, Oklahoma. WRC refines crude petroleum into a range of petroleum products including various grades of gasoline, distillates (such as kerosene, #2 diesel, and jet fuel), solvents, several grades of asphalt, residual fuel oils, propane, propylene, and butane. WRC's primary crude oil supply is by pipeline. Some crude oil is also received by truck. Products sold are moved via pipeline, trucks and rail cars.

Primary processes employed at WRC include crude distillation, vacuum distillation, fluidized catalytic cracking ("FCC"), catalytic hydrocracking ("hydrocracker"), catalytic hydrotreating, catalytic reforming ("CCR platformer") and alkylation. Other processes include crude desalting, asphalt oxidation, asphalt blending including polymer modified asphalt, asphaltene-resin separation, splitters, stabilizers, hydrogen production, and fuel gas treating.

All solid waste presently generated by the facility, including hazardous waste, is disposed off-site. Hazardous waste generated at WRC includes an assortment of waste typical for a petroleum refinery. That includes sludge from the oil/water separators, dissolved air flotation float, wastes from the refinery sewer systems, slop oils, wastes from heat exchanger cleaning and tank bottoms. Some hazardous debris, contaminated with these wastes and hazardous waste catalysts are also generated. With the exception of the units addressed by this permit application (i.e., T-2007 and the SWRP), all hazardous waste storage is limited to 90-days. 90-day drums are stored on a concrete pad that drains to the process wastewater system. Process wastewater and some stormwater is collected, treated with an activated sludge process, and discharged under a National Pollutant Discharge Elimination System ("NPDES") permit to the Washita River.

Activities at the refinery specifically addressed by this permit renewal application are two (2) Hazardous Waste Management ("HWM") units, which are referred to collectively as the HWM Facility, as well as groundwater remediation of the legacy environmental issues specified in RCRA Consent Order 15-056. The two (2) units are Tank 2007 ("T-2007") and the closed storm water retention pond ("SWRP"). T-2007 is a 30 feet high, 34-feet diameter, 5,000-bbl (210,000-gallon) capacity steel, fixed roof tank utilized for storage of hazardous waste, specifically API Separator Sludge (EPA Waste Code K051) and Dissolved Air Flotation Float (EPA Waste Code

K048). Pumps located at each of the two (2) API separators are manually operated to pump the sludge from collection sumps located the bottom of each API separator to T-2007. The pipeline to T-2007 is a 3-inch diameter carrier pipe inside a 6-inch diameter sleeve for secondary containment. Secondary containment for T-2007 consists of a 4.5-inch thick concrete secondary containment area that is capable of holding 100% of the contents of the tank plus a 24-hour, 25-year rainfall. The tank is cleaned as needed and accumulated wastes are sent for offsite disposal.

The SWRP was originally a 0.52-acre surface impoundment used to receive refinery stormwater. During heavy rain events, some refinery primary sludge may have been carried into the SWRP. When primary sludge was listed as a hazardous waste on May 2, 1991, the SWRP subsequently became a hazardous waste management unit. The SWRP was then closed following an EPA approved closure plan. In summary, the closure method included stabilization of sludge and affected soils, estimated to total 860 cubic yards, followed by disposal at the same location as the original SWRP into a landfill cell that was engineered to meet applicable RCRA regulations.

WRC operates four (4) groundwater remediation systems to remove light non-aqueous phase liquids from groundwater and to control the migration of dissolved-phase petroleum constituents. Facility-wide groundwater monitoring and remediation are currently governed by the requirements of RCRA Consent Order 15-056, which became effective on June 30, 2015.

5.2 Chemical and Physical Analyses: §270.14(b)(2)

Chemical and physical analyses are required for the waste accumulated in T-2007. The Facility designates the T-2007 waste by hazardous waste codes K048 and K051 due to the manner in which the waste is generated. Chemical and physical analysis of the hazardous waste accumulated in T-2007 is included in Attachment 2 to Appendix B of this Application.

5.3 Waste Analysis Plan: §270.14(b)(2), §270.14(b)(3) and §264.13

A copy of the Waste Analysis Plan for T-2007 is included in Appendix B.

5.4 Security Procedures and Equipment: §270.14(b)(4) and §264.14

In addition to the general security features at the Facility including of fencing, gates, and guards, several other features contribute to the safety and security of the refinery. Ample lighting is provided throughout the refinery site. Guards and operators are equipped with two-way radios to report upset or other emergency conditions immediately. In addition, a telephone system that includes phones in most plant areas is provided for internal and external communication.

All visitors must check-in at the front office and complete a site orientation to include verification that proper personal protection is used. The person the visitor is to see is contacted to approve and provide supervision of the visit. Safety training is provided when appropriate. Gate passes and car passes are issued and monitored. Car passes are controlled at the plant entrances.

The entire perimeter of the Facility is surrounded by 7-ft tall industrial chain-link fencing with a foot of barbed wire above that. In addition, internal fencing and signage has been installed around the closed SWRP to separate that area from other process areas. Guards are stationed at the three (3) Facility entrances to control access. Security cameras with pan/tilt/zoom capabilities are located at each guard location and can be manipulated as desired. The video is available on the Facility's network and selected personnel can manipulate the cameras through a software program. Four (4) fixed cameras are located at the product loading facility and the video is recorded. The terminal operator can review the recording as necessary. Employees carry magnetic proximity reader/ID cards allowing them access into areas where they are authorized to go. The main office includes an isolated lobby for visitor check-in before they are granted access into the building.

The surveillance system, as described above, is utilized on a 24-hour basis. In addition to operating personnel that are present 24 hours per day, contract security personnel are also on-site 24 hours per day. Security personnel conduct regular patrols to monitor activity during non-business hours.

Signs, large enough to be legible from a distance of 25 feet with the legend, "Danger - Unauthorized Personnel Keep Out" or a similar notice, are posted near T-2007 and the SWRP.

5.5 Inspection Schedule: §270.14(b)(5), §264.14(b), §264.193(i), §264.195, §264.303 and §264.1084

Hazardous Waste Management Units are inspected regularly by Facility personnel for equipment malfunctions, structural deterioration, and discharges that could cause or lead to the release of hazardous waste constituents and adversely affect the environment or threaten human health.

T-2007 is monitored on a daily basis for operational purposes whenever sludge is transferred to the tank. Daily operating data is gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design. Aboveground portions of the tank system are visually inspected daily to detect corrosion or releases of waste. The construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation), are also visually inspected daily. Whenever the tank is emptied, an internal inspection is completed and repairs as necessary are completed.

In regards to Subpart CC of 40 CFR 264, Air Emission Standards for Tanks, T-2007 was determined to be a Level 1 tank. The closed SWRP area is inspected on a semi-annual basis. Appropriate inspection plans and inspection forms are included in Appendix C of this Application.

5.6 Preparedness and Prevention, Subpart C: §270.14(b)(6)

WRC does not request any waivers of Part 264 Subpart C.

5.6.1 Design and Operation of Facility: §264.31

Although T-2007 is included in WRC's procedures to minimize the possibility of a fire or explosion, the API separator sludge and DAF float stored in T-2007 have virtually no possibility for a fire or explosion due to their chemical composition and physical properties. The T-2007 system includes double-walled piping for waste feed lines, a concrete tank base (sloped and grooved for leak detection), and an epoxy-coated, concrete-lined secondary containment. Construction details are included in Appendix D of this Application. In addition, T-2007 is identified in the Facility's Spill Prevention, Control, and Countermeasure ("SPCC") Plan provided in Appendix F of this Application.

The SWRP was closed in June 1994 in a manner to minimize post-closure possibilities of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water, which could threaten human health or the environment. The SWRP has a groundwater monitoring system in place for post-closure care.

These and other elements included in this application demonstrate that T- 2007 and the SWRP is designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

5.6.2 Required Equipment: §264.32

WRC is equipped with a refinery-wide alarm system, telephones, two-way radios, portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, decontamination equipment, water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers, and water spray systems.

Firewater supply is available from two (2) sources. One (1) is a 2.3MM gallon combination firewater/process water tank and one 4.2MM gallon combination firewater/process water tank. Two (2) diesel engine driven firewater pumps each rated at 2500 gallons per minute (“gpm”) at 150 psi take suction from the 4.2MM tank normally but can take suction from the smaller tank. Two (2) electric motor driven process water pumps (one (1) rated at 1800 gpm at 155 psi and one (1) rated at 1000 gpm at 168 psi) also take suction from the bigger tank. Both tanks can be filled from the 16-inch line from Lake Arbuckle. All pumps discharge into a common 10-inch line. The fire pumps are flow tested on an annual basis. Available test information indicates that performance is considered satisfactory. The diesel fire pumps are run weekly. The Facility is provided with a grid network of 8-inch and 10-inch underground firewater mains looped around the process blocks. This system supplies 116 fire hydrants, many with fixed monitors, fixed water spray systems and a number of deluge systems. The system is provided with numerous sectional isolation valves. Fire hoses and associated equipment are also available. A diagram of the plant fire water system is provided by Drawing 55-G-021 included as Figure G-6 in Appendix G of this Application.

5.6.3 Testing and Maintenance of Equipment: §264.33

All Facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, are tested and maintained as necessary to assure proper operation in time of emergency.

5.6.4 Access to Communications or Alarm System: §264.34

Whenever hazardous waste is being handled, all personnel involved in the operation either have immediate access to the internal alarm or emergency communication device, directly or through visual or voice contact with another employee. There is never only one (1) employee on the premises.

5.6.5 Required Aisle Space: §264.35

WRC, as part of normal safety procedures, maintains aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the Facility in an emergency. T-2007 and the SWRP are located in areas that are relatively clear of other process activities.

5.6.6 Arrangements with Local Authorities: §264.37

WRC has an internal fire brigade that is trained to respond to emergencies that may occur within the refinery. Although the waste associated with T-2007 and the SWRP are highly unlikely to result in the need for outside emergency responders, WRC has made arrangements with the local police, fire departments, hospitals, and other emergency responders. Although fire response is by company personnel, the local fire department is trained to provide mutual aid as required. WRC invites local fire department personnel in the refinery for site-specific training approximately twice a year. In addition, WRC periodically conducts mock drills that include the local fire department and other outside emergency responders.

5.7 Contingency Plan: §270.14(b)(7)

The Facility developed an Emergency Response and Crisis Management Plan (“ERCMP”) to detail how the facility would respond to the following emergencies: The scope of that plan is to

present the preparations and plans the Facility has developed for prevention, recognition, and response to emergencies that might occur at the refinery.

A copy of the ERCMP, which is used for all emergency responses and includes elements specific to T-2007 and the SWRP, is included in Appendix E. The ERCMP does not include all of the elements required by 40 CFR §112.7 for an SPCC Plan. The SPCC Plan is included in Appendix F of this Application.

5.8 Procedures, Structures, or Equipment: §270.14(b)(8)

5.8.1 Prevention of Hazards During Loading/Unloading: §270.14(b)(8)(i)

The contents of T-2007 (K051 and K048 waste) are emptied by a contractor who uses pads and booms to control any spills during the loading process. Any liquids recovered during the processing are returned to the refinery's wastewater treatment system. Before opening the manway on the tank, all liquid that can be pumped from the tank is removed through tank nozzles. As noted in Appendix D T-2007 is located in concrete secondary containment. Therefore, spills within the secondary containment cannot affect soils. Liquids are typically shipped by tankers or vacuum trucks. If the waste or a portion of the waste is processed to a solid, those solids are transferred to hardtop roll-off boxes for shipment. Once waste is removed from T-2007, it is shipped off-site within 90 days.

During the waste removal and loading process, contaminated materials, such as personal protection equipment, is collected, properly stored in containers and shipped off-site for disposal within 90 days of generation. After waste removal and loading, the equipment and the concrete secondary containment area are power washed with the wash material returned to the refinery waste water system.

5.8.2 Prevention of Runoff and Flooding: §270.14(b)(8)(ii)

Stormwater from the T-2007 area is collected within the secondary containment structure; therefore, runoff to other areas of the Facility cannot occur. Any water collected within the secondary containment is allowed to evaporate or is returned to the Facility's wastewater treatment system.

The SWRP is capped therefore runoff cannot become contaminated.

5.8.3 Prevention of Contamination of Water Supplies: §270.14(b)(8)(iii)

T-2007 is essentially fail-safe in regards to the possibility of contaminating water supplies because of the use of double-walled transfer piping and impermeable secondary containment (see Appendix D).

The closed SWRP is monitored for possible groundwater impacts. Based on the monitoring results, groundwater contamination from the SWRP has not occurred and is not likely to occur because the waste is protected from leaching through the presence of an impermeable cap.

5.8.4 Mitigation of Effects of Equipment Failure and Power Failure: §270.14(b)(8)(iv)

In general, T-2007 would not be affected by equipment failure other than a failure of the tank itself as addressed by the SPCC plan located in Appendix F. Any release to the secondary containment system would drain to the API separator by design. The API separators contain sumps that are periodically pumped to T-2007, but the API separators can go several days without pumping. If power were lost, any open valves would be manually closed.

The SWRP would not be affected by equipment or power failure.

5.8.5 Prevention of Personnel Exposure: §270.14(b)(8)(v)

WRC has implemented stringent safety requirements in accordance with Occupational Safety and Health Administration ("OSHA")29 CFR Part 1910 Subpart I-Personal Protective Equipment ("PPE"). All employees must wear fire retardant clothing with long sleeves, safety shoes, hard hats, and safety glasses when in operating areas of the refinery. In addition, specific PPE, such as gloves, gas masks, and face shields, are required in certain area or when performing certain functions. Confined Space Entry Permits are required prior to entry into any tanks, including T-2007. Self-Contained Breathing Apparatus or Air-Line Respirators are required for initial entry during cleaning of T-2007. Employees are trained on the requirements for and the use of PPE. Additional details about the composition of the waste can be found in Appendix B, and additional comments about PPE can be found in Appendix E.

5.8.6 Prevent Releases to Atmosphere: §270.14(b)(8)(vi) and §270.27

T-2007 is equipped with a fixed roof designed to form a continuous barrier over the entire surface area of the hazardous waste in the tank. Waste is not mixed, stirred, agitated, or circulated to produce splashing, frothing, or visible turbulence. The tank is not heated or stabilized to create exothermic conditions. Wastes stored in T-2007 have a maximum organic vapor pressure of less than 5.2 kilopascal (kPa) (0.75 pounds per square inch ("psi")). As such, under 40 CFR §264 Subpart CC, T-2007 is a Level 1 Tank.

T-2007 is controlled with sealed openings and a pressure/vacuum relief device designed to operate so that emissions to the atmosphere are minimized. This is also to protect tank integrity.

The fixed roof and its closure devices are visually inspected by WRC to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

5.9 Precautions to Prevent Accidental Ignition or Reaction of Ignitable, Reactive, or Incompatible Wastes: §270.14(b)(9).

The hazardous wastes associated with T-2007 and the SWRP are not subject to accidental ignition or reaction based on their inherent nature and chemical composition. In addition, the wastes are from the same or similar processes and do not contain incompatible constituents.

5.10 Traffic Pattern: §270.14(b)(10)

WRC is located in a relatively rural area immediately to the south of the town of Wynnewood, Oklahoma. Facility layout including loading/unloading areas for hazardous waste and traffic patterns are illustrated in Figure G-5 in Appendix G. Internal roads in the refinery vary between concrete, asphalt, and gravel. With the exception of loading terminals, traffic within the refinery is relatively light and consists mainly of operation and maintenance vehicles. No unauthorized access to the refinery is allowed and contractor access is controlled to minimize traffic. Product loading facilities include a terminal for loading asphalt, a terminal for loading motor fuels and a

terminal for loading military jet fuel. Those loading operations are strictly controlled and the traffic will not impact access to the hazardous waste facilities.

5.11 Facility Location Information: §270.14(b)(11)

The Facility is located on 473 acres in Section 23, Township 2N, Range 1EIM, Garvin County, Oklahoma. Figure G-1 in Appendix G is a site plan of the refinery and adjoining property. Other figures in Appendix G provide additional location information. One can drive to the Facility by taking Wynnewood exits 64 or 66 off I-35, and going east to US Highway 77. The Facility is located on highway 77 immediately south of the town of Wynnewood, Oklahoma.

- The center of the facility is located at approximately 34°37'53" latitude and -97°10'05" longitude.
- The center of T-2007 is located at approximately 34°37'49.5" latitude and -97°10'14" longitude.
- The center of the SRWP is located at approximately 34°37'32" latitude and -97°10'05" longitude.

5.11.1 Seismic Standard: §264.18(a)

Garvin County, Oklahoma is not listed in appendix VI of part 264, therefore no further information is required to demonstrate compliance with §264.18(a).

5.11.2 100-year Floodplain: §270.14(b)(11)(iii)

A map, prepared from the Federal Emergency Management Agency ("FEMA") Flood Map, showing the 100-year flood plain is included in Figure G-3 of Appendix G. T-2007 is not located in the 100-year flood elevation. However, the closed SWRP is located within the 100-year flood plain.

The cap on the closed SWRP consists of two (2) feet of clay compacted to a 95% Proctor maximum density. The clay cap was graded to a slope of approximately 5%. A needle punched non-woven polypropylene geotextile is on top of the clay cap with a minimum 2 feet of overlap. A 40-mil high-density polyethylene ("HDPE") skirt was bolted, with stainless steel expansion bolts, to the pump station to provide a watertight connection with the clay cap. That skirt minimizes the

collection of liquids between the clay cap and the pump station. All seams in the HDPE were extrusion welded. The geotextile was lapped over the corners of the pump station to provide a cushion for the HDPE. The skirt extends two (2) feet over the clay cap and neoprene is present at the edge of the HDPE between the skirt and the concrete to prevent water from running under the skirt. A stainless steel batten strip was bolted every six (6) inches to hold the HDPE tightly to the pump station. A synthetic drainage layer was placed over the entire cap as drainage media. Approximately six (6) inches of 1.5-inch crushed limestone serves as the final cover material to prevent damage to the cap. The design of the cap provides excellent protection of the cap against erosion.

5.12 Personnel Training Program: §270.14(b)(12)

WRC conducts extensive training of facility personnel on how they can perform their duties in a way that ensures compliance with RCRA and other environmental and safety programs. The Training Supervisor manages the overall training program and maintains detailed records of the personnel training.

A copy of the Personnel Training Program is included in Appendix H of this Application.

5.13 Closure and Post-Closure Plans: §270.14(b)(13)

T-2007 will be clean-closed as an individual unit. Because the tank will be clean-closed, the need for post-closure is not anticipated. The Closure Plan for T-2007 is included in Appendix I of this Application.

The SWRP was closed as per the approved closure plan provided in Appendix J of this Application). The SWRP is currently under post-closure care as per the approved Post-Closure Plan provided in Appendix K of this Application.

5.14 Closure Notification: §270.14(b)(14)

The Facility will notify the ODEQ in writing at least 45 days prior to the date on which it expects to begin final closure of T-2007. The date when the Facility “expects to begin closure” will be either: (1) No later than 30 days after the date on which T-2007 receives the known final volume of hazardous wastes, or (2) if there is a reasonable possibility that T-2007 will receive additional

hazardous wastes, no later than one (1) year after the date on which T-2007 received the most recent volume of hazardous wastes. In the event that the Facility anticipates receiving additional hazardous waste into T-2007 after one (1) year, WRC may request an extension to the one-year limit from ODEQ. In that instance, the Facility would first demonstrate T-2007 has the capacity to receive additional hazardous wastes and that WRC has taken all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements.

Closure notification was made for the SWRP prior to approval of the Post-Closure Plan that is now in effect.

5.15 Closure Cost Estimate: §270.14(b)(15)

5.15.1 Most Recent Closure Cost Estimate: §264.142

The closure cost estimate for T- 2007 is included in the Tank 2007 Closure Plan in Appendix I.

5.15.2 Demonstration of Financial Assurance: §264.143

The financial test and corporate guarantee for the T-2007 closure plan is presented in Appendix M of this Application.

5.16 Post-closure Cost Estimate: §270.14(b)(16)

5.16.1 Most Recent Post-Closure Cost Estimate: §264.144

The post-closure cost estimate for the SWRP is presented in Appendix L. That estimate is for the remaining nine (9) years of post-closure care and is based on 2016 dollars.

5.16.2 Demonstration of Financial Assurance: §264.145

The financial test and corporate guarantee for the SWRP post-closure plan is presented in Appendix M.

5.17 Pollution Liability Insurance: §270.14(b)(17) and §264.147

The most recent Certificate of Liability Insurance is included in Appendix N of this Application.

5.18 State Financial Mechanism: §270.14(b)(18)

This requirement is not applicable to WRC.

5.19 Topographic Map: §270.14(b)(19)

A topographic map of the HWM Facility and surrounding area is included as Figure G-2 of Appendix G.

The map includes the required elements in the following subsections.

5.19.1 Map Scale and Date: §270.14(b)(19)(i)

The topographic map provided as Figure G-2 in Appendix G-2, was derived from the United States Geological Survey ("USGS") topographic 7.5-minute series Pauls Valley, OK quadrangle map for the year 2013. The map scale is 1:24,000.

5.19.2 100-year Floodplain Area: § 270.14(b)(19)(ii)

Information (including maps) about the 100-year floodplain area is discussed in Section 5.11.2. A Floodplain Map is included as Figure G-3 in Appendix G.

5.19.3 Surface Waters Including Intermittent Streams: §270.14(b)(19)(iii)

The surface water features within 1,000 feet of the HWM Facilities are shown in Figure G-2 of Appendix G. The Washita River flows from north to south about three (3) miles west of the refinery. An unnamed tributary crosses the southern portion of the refinery property and eventually empties into Turkey Sandy Creek, which empties into the Washita River.

5.19.4 Surrounding Land Use: §270.14(b)(19)(iv)

T-2007 and the SWRP are located within the Facility's property. Immediately north of the refinery is the small town of Wynnewood, Oklahoma (population in 2014 of about 2,213). Primarily, houses and small businesses occupy the properties immediately north of the refinery. The area to the south and east is rural and consists of a few homes and small businesses interspersed with

farm, ranch, and undeveloped land. Figure G-2 in Appendix G is a USGS topographic map detailing the land use of the area surrounding the Facility.

5.19.5 Wind Rose: §270.14(b)(19)(v)

Figure G-4 in Appendix G shows mean annual wind direction and mean annual wind speed, respectively, in the Oklahoma area. The prevailing wind direction in the area is out of the north.

5.19.6 Orientation of the Map: §270.14(b)(19)(vi)

The orientation of the map is shown by a north arrow in the Northeast corner.

5.19.7 Boundaries of the HWM site (i.e., location of Tank 2007 and the SWRP): §270.14(b)(19)(vii)

Facility boundaries, as well as the locations of Tank 2007 and the SWRP, are clearly marked on Figure G-2. .

5.19.8 Access Control: §270.14(b)(19)(viii)

Access and internal roads, loading and unloading areas, and fire control facilities for the refinery in general are noted on the facility drawings in Appendix G.

The HWM units (Tank 2007 and the SWRP) are surrounded on all sides by the Facility's property. The Facility controls general access to the refinery by an industrial fence and guarded access gates. T-2007 is also contained within a concrete secondary containment that restricts vehicular traffic. The SWRP is surrounded with a chain and warning signs to keep vehicles and personnel off the cap.

5.19.9 Injection and Withdrawal Wells: §270.14(b)(19)(ix)

Although a large number of monitoring and recovery wells are located on-site for monitoring and remediation of the uppermost groundwater under the facility, WRC does not have any injection wells onsite. The City of Wynnewood operates a community drinking water treatment and supply system that provides drinking water to most residences in the area. The source of this water is Lake Arbuckle, located approximately 15 miles southeast of the Facility. WRC also receives water

for processing purposes from Lake Arbuckle. The locations of public water supply wells are shown on Figure G-2 in Appendix G.

5.19.10 Buildings, TSD Operations, Other Structures: §270.14(b)(19)(x)

The entire refinery is controlled for runoff with stormwater directed to a stormwater discharge point. Process wastewater is collected, treated, and discharged to the unnamed tributary that flows to Turkey Sandy Creek. Both discharges are in accordance with the Oklahoma Pollution Discharge Elimination System ("OPDES") permit. T-2007 is protected from runoff with secondary containment (see Appendix D). The runoff from the cap over the SWRP is directed to the monitored stormwater discharge point. The SPCC plan (see Appendix F) includes additional details.

5.19.11 Barriers for Drainage or Flood Control: §270.14(b)(19)(xi)

The Washita River flows from north to south about three (3) miles west of the refinery. A small creek crosses the southern portion of the refinery property and eventually empties into the Washita River. Active unit T-2007 is situated above the 100-year flood elevation of the Washita River and the creek.

5.19.12 Location of HWM Units: §270.14(b)(19)(xii)

The location of T-2007 and the SWRP are noted on the drawings in Appendix G.

5.20 Other Federal Laws: §270.14(b)(20) and §270.3

The Facility does not believe that any other federal laws directly affect the ability of the refinery to store hazardous waste or to carry out post-closure activities at the SWRP.

5.21 Land Disposal Facilities: §270.14(b)(21)

The requirements of this part does not apply to the Facility.

5.22 Pre-Application Meeting: §270.14(b)(22)

A pre-application meeting was not held for this reapplication. Representatives of the Facility are available should the ODEQ desire a meeting.

6.0 Additional Information Requirements: §270.14(c)

6.1 Summary of Groundwater Monitoring Data Obtained During Interim Status: §270.14(c)(1)

There are no groundwater monitoring requirements applicable to T-2007.

Previous owners of the Wynnewood Refinery completed several studies of groundwater and soil conditions at the refinery, including background information, solid waste management unit ("SWMU") evaluations, and elimination of a land treatment unit as a RCRA facility. In general, the information previously submitted defined the areas of product plumes and eliminated areas that were involved in SWMU evaluations from further RCRA concern.

Currently, the Facility conducts two (2) programs associated with groundwater monitoring and product recovery. On a semiannual basis, the Facility monitors the groundwater at the SWRP and reports the data in the Semi-annual Post-Closure Monitoring Report. A copy of the most recent SWRP Post-Closure Monitoring Report is included as Appendix P of this Application. Semi-annual perimeter groundwater monitoring is conducted in accordance with the requirements of RCRA Consent Order 15-056. Monitoring results and a discussion of groundwater remediation activity are reported to ODEQ in the Semi-Annual Groundwater Remediation Report. A copy of the most recent Semi-Annual Groundwater Remediation Progress Report is included as Appendix Q of this Application.

6.2 Uppermost Aquifer and Groundwater Flow: §270.14(c)(2)

The uppermost aquifer at the Facility is the alluvial aquifer found within the present-day flood plain of the Washita River. That aquifer ranges in thickness from 20 to 40 feet at the refinery site and consists principally of silt, sand, and gravel. Hydrogeological properties of the alluvial aquifer at the SWRP are presented in Attachment A of Appendix K.

There are no aquifers underlying the Facility that are hydraulically interconnected with the alluvial aquifer. The bedrock units underlying the SWRP consist principally of shale with thin sandstone beds and lenses. No known water wells are completed within these bedrock units in the area.

The bedrock units are capable of yielding only minor quantities of fresh to slightly saline water to drilled wells (see Attachment B of Appendix K).

The groundwater at the SWRP historically flows in a west-southwesterly direction. During a recent high water table period, groundwater flow has been towards the south-southeast. The current groundwater flow rate is approximately 1.5 feet/day. The hydraulic gradient is approximately 5 x 10^{-3} feet/foot or about 25 feet/mile. For the Wynnewood Refinery in general, groundwater flow is towards the southwest with some localized variations. The current horizontal gradient in the northern and eastern part of the refinery (generally the area east of Highway 77) is approximately 77 feet/mile while the current horizontal gradient west of Highway 77 is 14.8 feet/mile. A more detailed description of the flow rates and direction can be found in the Semi-Annual Groundwater Remediation Progress Report found in Appendix Q.

6.3 Delineation of the Waste Management Area, Property Boundary, and Point of Compliance: §270.14(c)(3)

For the SWRP, the downgradient monitoring wells are currently located on the boundary of the unit and are considered the current “point of compliance.” Current upgradient and downgradient wells are documented in Appendix P. The location of the SWRP in relation to the entire facility is shown in Appendix A, Attachment 1, and in Appendix P. The facility property boundary is shown in Appendix A, Attachments 1-3. With incorporation of RCRA consent order 15-056 into the RCRA permit, the point of compliance will move to the facility boundary (see Performance Monitoring and Sampling Plan in Appendix S).

6.4 Plume of Contamination: §270.14(c)(4)

Diesel-range organics are present in both upgradient and downgradient monitoring wells at the SWRP. Benzene and gasoline-range organics are not present at the SWRP in concentrations exceeding maximum contaminate levels for drinking water. Metals are present in both upgradient and downgradient monitoring wells and are generally considered naturally occurring compounds within the alluvial aquifer. Arsenic is present at concentrations exceeding its maximum contaminant level for drinking water in several SWRP monitoring wells. Recent groundwater monitoring results indicate that the arsenic in some downgradient wells has shown a statistically significant increase over background levels; however WRC has demonstrated that the occurrence

of diesel-range organics and arsenic is not related to any release from the SWRP. (See the *90-Day Follow –Up Report Regarding the August 14, 2015 Notification of Statistically Significant Results* and ODEQ's Response in Appendix R.)

6.5 Groundwater Monitoring Program: §270.14(c)(5)

The current groundwater monitoring program for the SWRP is described in Section 2 of Appendix K.

6.5.1 Current Groundwater Monitoring Program

The monitoring network currently consists of eight wells. Four (4) wells are screened near the top of the alluvial aquifer (SWM-5, SMW-9, SMW-11, and SMW-21). Four (4) wells are screened slightly lower in the alluvial aquifer and are located immediately adjacent to their corresponding shallow wells (SMW-5D, SMW-9D, SMW-11D, and SMW-21D). The wells have been sampled semi-annually since 1994. No verifiable release of hazardous constituents attributable to the SWRP has been detected; however, as discussed in Section 6.8, the SWRP is co-located with known groundwater contamination.

6.5.2 Groundwater Monitoring Program During Corrective Action

The groundwater monitoring program for the SWRP will be incorporated into the Corrective Action Program (Section 6.8). Two (2) wells on the perimeter of the SWRP (SMW-9 and SMW-11) will continue to be sampled semi-annually for the parameters specified in the Performance Monitoring and Sampling Plan (Appendix S). The sampling frequency for the other six (6) wells in the current SWRP monitoring network (SMW-5, SMW-21, SMW-5D, SMW-9D, SMW-11D, and SMW-21D) will be reduced to a five-year sampling schedule (beginning in June 2020). This sampling scheme will continue to provide for detection of a release from the SWRP in the context of the co-located groundwater contamination, the perimeter and extent of which will be monitored in accordance with the Performance Monitoring and Sampling Plan (Appendix S). Statistical methodologies will be used to determine if hazardous constituents have been released from the SWRP using the semi-annual and five-year sampling data.

6.5.3 Statistical Analysis

As part of the groundwater monitoring program for the SWRP, statistical analysis of groundwater samples taken from upgradient and downgradient compliance monitoring wells will be performed. Statistical analysis may also be utilized as one (1) of the tools to assess corrective measures in place at the facility.

The Facility will utilize a statistical software package (ProUCL 5.0 or other appropriate statistical software program) for the statistical analysis of groundwater data. The program decision logic will identify the distribution of the data and use appropriate parametric or non-parametric versions of the statistical method chosen by the user.

Statistical analysis will be completed for the groundwater monitoring wells in the compliance network listed below. Upgradient and downgradient designations for the wells are based on hydraulic conditions across the site as demonstrated by previously completed analysis.

Upgradient Wells:

- SMW-1 (semi-annual)

Downgradient Wells:

- SMW-9, SMW-11 (semi-annual)
- SMW-5, SWM-5D, SMW-9D, SMW-11D, SMW-21, and SMW-21D (five-year sampling frequency)

Statistical Procedures

Primary and Verification Statistical Methodology will be utilized. Appropriate statistical methodology from 40 CFR 258.53 (g) will be used to analyze these constituents. More information regarding these methods can be found in the EPA publications *"Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities - Addendum to Interim Final Guidance"* USEPA/OSW, July 1992, and *"Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance"*, USEPA/ORCR, March 2009.

Primary and Verification Inferential Statistical Methods

The Facility will use primary and verification statistical methods as the statistical tool for monitoring groundwater quality at the facility. The selected statistical methods will be chosen such that the minimum number of background results are available, and will be appropriate for the site conditions.

The guidance documents referenced above describe the procedures required for performance of the statistical analysis. If the primary statistic indicates a statistically significant variation from the background concentration for any parameter, the verification statistic will be employed to verify the initial results.

If any parameter fails both the primary and verification statistical methods, the facility may exercise the option to perform verification resampling for the parameter(s) indicating the significant variation. The verification resampling analytical results will be compared to the primary and secondary statistics previously calculated to determine if the initial statistical results can be verified.

Descriptive Statistical Analysis

In addition to the inferential statistics described above, descriptive statistical techniques will be employed to better describe any trends in the data and graphically illustrate the distribution and any outlier values that may be noted within the data base. These descriptive methods will include:

- Time series plots, designed to graphically illustrate changes in constituent concentration over time. These plots will be developed for each detected constituent from each well and can determine if the concentration of any analyte is increasing, decreasing, or constant over time.
- To better illustrate the distribution of each parameter, Box and Whisker plots will be generated for each detected parameter from each well. Significant deviation from the background concentration can be graphically demonstrated by utilizing Box and Whisker plots.
- To identify anomalous values in the data set, Outlier analysis may be performed for each parameter which indicates a significant variation from the background levels. In many cases, these outlier values can graphically illustrate suspect values which may be

attributed to sampling or laboratory error. In other cases, Outlier analysis can be used to aid in the verification of a statistically significant result if other factors can be ruled out.

6.6 Detection Monitoring Program: §270.14(c)(6)

The most recent Semiannual Post-Closure Monitoring Report for the SWRP, included in Appendix P of this Application, defines the current detection monitoring program.

6.7 Compliance Monitoring Program: §270.14(c)(7)

No hazardous waste constituents attributable to a release from the SWRP have been detected in the groundwater at the current point of compliance for the SWRP.

6.8 Corrective Action Program: §270.14(c)(8)

Corrective action at the refinery is currently governed by a RCRA Consent Order (Attachment 2). The SWRP is located in an area of the refinery with a known diesel-range organics contaminant plume. This plume is being monitored for off-site migration by the perimeter groundwater monitoring network established under the RCRA Consent Order. The downgradient edge of this plume is undergoing groundwater remediation through operation of the South Boundary Remediation System. Under the RCRA Consent Order corrective action at the refinery is accomplished through implementation of the *Comprehensive Remediation Plan* (approved by ODEQ on February 1, 2016), the *Performance Monitoring and Sampling Plan* (submitted to ODEQ on February 1, 2017 and revised on April 25, 2017 in accordance with ODEQ's instructions), and, specifically regarding the South Boundary Remediation System, the *South Boundary Remediation System Conceptual Design Report* (approved by ODEQ on June 9, 2016). A copy of these documents is provided in Appendix S of this Application.

7.0 Solid Waste Management Units: §270.14(d)

7.1 RCRA Facility Assessment: §270.14(d)(3)

A number of SWMUs were identified on the property as part of a RCRA Facility Investigations ("RFIs") previously conducted. Those units are:

- API Separators (2)
- API Separator Sludge Pit
- Asphalt Pits (4)
- Biosludge Pit
- Drainage Ditch
- Lake Miller (closed SWRP)
- Landfill
- Leaded Tank Bottoms Disposal Areas (2)
- Lime Sludge Pit
- Oil Traps (2)
- Process Wastewater Drainage Ditch
- Settling lagoons (3)

A thirteenth SWMU, buried drums east of the asphalt control building, was identified in 2014 after the RFI had been completed.

The status of each unit is discussed below.

API Separators

Two (2) API separators are utilized to separate water from liquid phase hydrocarbons in process wastewater. API Separator No. 1 was constructed in 1967 along with the wastewater treatment system. This separator is uncovered and is located at the southern end of the process wastewater drainage ditch. API Separator No. 2 was constructed in 1976, is covered, and is located north of API Separator No. 1. The separators consist of two (2) parallel concrete tanks that separate hydrocarbons from water by gravity.

API Separator Sludge Pit

Beginning in 1967, an un-lined API Separator Sludge Pit was used to store solids from API Separator 1. That pit was closed in 1981 under an Oklahoma State Department of Health ("OSDH") approved plan. The waste was placed on the Land Treatment Facility for disposal.

Asphalt Pits

Four (4) asphalt pits were utilized from approximately 1930 to 1980 for placement of off-specification asphalt and soils. The removal of Asphalt Pits 1 and 2 was completed in February 1996 and Asphalt Pit 3 was removed in 1994. Asphalt Pit 4, was covered with soil with the intent to consider it closed in place. The RFI process included additional investigation of Asphalt Pit 4. At the conclusion of the RFI, the Facility owner at the time proposed no further action for Asphalt Pit 4. On October 3, 1996, the Waste Management Division of the ODEQ sent a letter stating, "no further work to characterize soil and groundwater, nor is a corrective measures study required for" the Asphalt Pit 4.

Biosludge Pit

After the removal of most of the liquid phase hydrocarbon from the process wastewater at the API Separator, the wastewater enters a bio-oxidation ditch, where biodegradation reduces the levels of dissolved hydrocarbons in the wastewater. The wastewater then flows through a clarifier, where biological and other solids are allowed to settle out and are removed from the system. From 1967 to 1985, those solids were placed in the Biosludge Pit. Approximately 2,000 barrels per year of biosludge were disposed of in that manner. The Biosludge Pit was closed in 1985 by removing the biosludge, stained soil and additional soil to a depth of six (6) inches below visible staining. The excavated waste was placed on the Land Treatment Facility.

Drainage Ditch

An un-lined storm water drainage ditch runs between the railroad tracks and the process wastewater drainage ditch. That ditch was constructed to carry stormwater. However, in the past, during significant precipitation events, some oily process wastewater was diverted to the stormwater drainage ditch via an overflow weir in the process wastewater drainage ditch. The ditch discharged to the SWRP. In 1993, the un-lined drainage ditch was cleaned, and a new concrete stormwater lift station was installed to keep any oily stormwater out of the ditch. Clean

stormwater, not processed through the wastewater treatment plant, can now be discharged back into the drainage ditch via an OPDES permitted discharge point identified as Outfall 002.

Lake Miller (Closed Stormwater Retention Pond, "SWRP")

The SWRP was originally a 0.52-acre surface impoundment used to receive refinery stormwater. During heavy rain events, some refinery primary sludge may have been carried into the SWRP. When primary sludge was listed as a hazardous waste on May 2, 1991, the SWRP subsequently became a hazardous waste management unit. The SWRP was closed following an EPA approved closure plan. The closure method included stabilization of sludge and affected soils, estimated to total 860 cubic yards, followed by disposal at the same location as the original SWRP into a landfill cell that was engineered to meet applicable RCRA regulations. The SWRP was certified closed on June 21, 1994 with waste stabilized in place. The SWRP continues to require post-closure care in a manner consistent with the current permit.

Landfill

Fill and construction debris, primarily asphalt, were excavated and placed in a landfill, which was closed in 1967 during construction of the existing wastewater treatment system. That closed landfill is located on the south side of the Facility and can be identified by a slight rise in topography. The landfill is covered in grass but has a few areas of exposed asphalt. No further investigation is required of this area.

Leaded Tank Bottom Disposal Areas

Two (2) disposal areas for leaded tank bottoms were identified. One (1), the Northern Leaded Tank Bottoms Disposal Area, is located within the confines of the gasoline storage tanks in the northeastern portion of the Facility. The second, the Southern Leaded Tank Bottoms Disposal Area, was identified from old photographs as an area where apparent spreading of tank bottoms had taken place. There is no visible evidence of past tank bottoms disposal in this area at present. Since 1981, leaded tank bottoms generated by the refinery have been disposed of in a permitted off-site treatment, storage and disposal facility. Leaded gasoline is no longer produced so waste is no longer generated.

The RFI process required additional investigation of the Southern Leaded Tank Bottoms Disposal Area and the Northern Leaded Tank Bottoms Disposal Area. On October 3, 1996, the Waste

Management Division of the ODEQ sent a letter stating "no further work to characterize soil and groundwater, nor is a corrective measures study required for" the Southern Leaded Tank Bottoms Disposal Area. In addition, the RFI for the Northern Leaded Tank Bottoms Disposal Area is deferred because of the proximity to a free-product hydrocarbon plume (North Process Area hydrocarbon plume) that must first be remediated. The requirements for the remediation of the North Process Area hydrocarbon plume are outlined in the CMP and the PMP. Both the CMP and PMP are located in Attachment 2.

Lime Sludge Pit

The lime sludge pit was closed in 1982 by removing the sludge and taking it to the land treatment facility located west of the railroad tracks. The lime sludge pit waste was sampled and found to consist primarily of a nonhazardous calcium carbonate. Therefore, no further investigation has been required.

Oil Traps

Two (2) oil traps, located near the existing API separators, were taken out of service in 1979. The sludge was removed from the units and taken to the land treatment facility. The oil traps were then backfilled.

Process Wastewater Drainage Ditch

The Process Wastewater Drainage Ditch carries process wastewater through the facility to the API Separators. The downstream part of the ditch was concrete lined in the late 1960s, and runs from near API Separator 2 to API Separator 1. The upstream portion of the ditch was replaced with a sewer pipe in the early 1970s.

Settling Lagoons

The final stage of the wastewater treatment system is a set of three (3) Settling Lagoons. Those lagoons are used to provide retention time for the settling of additional solids. Accumulated sludge is periodically excavated from the bottoms of these lagoons. The sludge that collects in these lagoons is also considered biosludge, consisting of suspended solids that did not settle out in the clarifier. Non-hazardous biosludge is currently disposed off-site in an approved landfill. The Settling Lagoons discharge into a lift station. From there, the treated refinery wastewater is

pumped through an underground pipe to the Washita River located three (3) miles west of the refinery (OPDES Outfall 001).

Closed Land Farm

In addition to the above units, a former owner/operator, Kerr-McGee, had closed an on-site hazardous waste land farm on November 16, 1992 and had begun post-closure monitoring of the land farm. A post-closure permit issued by the ODEQ on July 21, 1995 required 30 years of post-closure care. While continuing the post-closure monitoring of the land farm, Kerr-McGee simultaneously began a process to obtain early termination of the 30-year post-closure period. Kerr-McGee demonstrated that the soil and groundwater associated with the land farm were clean to required levels. On June 23, 1997, the ODEQ approved the Facility's request to remove the land farm from post-closure care. This eliminated both soil and groundwater sampling. Although no longer under sampling obligations, the land farm was still considered part of the RCRA program. Using the technical data already submitted, the Facility completed another administrative process on December 22, 1997 to completely remove the land farm from the RCRA program.

Buried Drums East of the Asphalt Control Building

On May 28, 2014, WRC encountered buried drums during exploratory work for a new building east of the asphalt control building. Crushed drums, cans, buckets, lumber, and other miscellaneous debris were found a t depth of 3-7 feet below ground surface in area 15 feet by 50 feet. Asphalt and tar were present throughout the area. Samples were collected and analyzed for volatile organic compounds, semi-volatile organic compounds, and metals commonly associated with the refining process. The analytical results were compared to US EPA screening levels and no analytes were detected in excess of its screening level. A notification letter was sent to ODEQ on June 23, 2014. ODEQ acknowledged receipt of the notification on July 23, 2014, and noted that the buried drum area would be catalogued with the existing SMWUs in Table VII-1 of the permit.

Additional correspondence about SWMUs at the Facility is included in Appendix O of this Application.

8.0 Specific Information for Tank Systems: §270.16.

8.1 Assessment of Existing Tank System's Integrity: §264.191(a)

T-2007 has a secondary containment meeting the requirements of §264.193.

8.2 Assessment Reviewed and Certified by a Professional Engineer: §270.16(a)

A written assessment that is reviewed and certified by a qualified Professional Engineering is included in Appendix D. This assessment certifies each tank system's structural integrity and suitability for handling hazardous waste.

8.3 Dimensions and Capacity of Each Tank: §270.16(b)

T-2007 has a diameter of 34 feet, a straight side height of 30 feet, and a shell thickness of 3/8 inches. The tank has a storage capacity of 214,200 gallons.

8.4 Description of Feed Systems, Safety Cutoff, and Pressure Controls: §270.16(c)

T-2007 receives waste from WRC's two (2) API separators. Pumps, located at each separator, are manually operated to pump the sludge from the collection sumps located in the bottom of the separators. Valves are located at the pumps and the tank. Shutting down the pump and closing the valves obtain safety cutoff. The line to T-2007 cannot be bypassed. The pipeline to the tank is a 3" diameter carrier pipe inside a 6" diameter sleeve for secondary control. The tank has been modified to decant water and oil from the sludge. The supernatant, consisting of water and oil, is returned to the API separator for oil recovery. The water is treated in the refinery's wastewater treatment system.

8.5 Diagram of Piping, Instrumentation, and Process Flow: §270.16(d)

The piping details are shown on Figures D-1, D-2, and D-3 in Appendix D. It is important to note that Figures D-1 through D-3 are only accurate for the tank details because the secondary containment has been modified as also shown on Figure D-4.

8.6 External Corrosion Protection: §270.16(e)

Although the tank is not new, external corrosion is prevented with paint and the tank is set on an epoxy coated concrete pad to protect the bottom from the soil. Underground piping associated with the tank is protected with the refinery's overall cathodic protection system.

8.7 Secondary Containment: §270.16(g)

8.7.1 Containment and Detection of Releases: §264.193(a)

Secondary containment was installed before the tank reached 15 years of age (March 1996).

8.7.2 Secondary Containment System: §264.19(b)

As described in Appendix D, the secondary containment system for T-2007 prevents any migration of wastes or accumulated liquid out of the system to the soil, groundwater, or surface water at any time during the use of the tank system. Any release to the secondary containment system is detected by inspection.

8.7.3 Secondary Containment Requirements: §264.193(c) and §264.193(d)

T-2007 is constructed of steel and is compatible with the waste material stored in it. This tank exhibits a maximum corrosion rate of 0.002 inches/year. At this rate, the expected lifetime for a tank with a shell thickness of 3/8 inches would be approximately 30 years.

T-2007 is set on an epoxy coated concrete base. The secondary containment external to the tank base is a 4.5-inch thick concrete slab (see details in Appendix D) that is compatible with the waste.

The secondary containment is sloped to an internal drain that is kept closed under normal operating conditions. Any accumulated precipitation or waste, in the event of a release, can be removed from that drain in a timely manner.

8.7.4 Secondary Containment Requirements: §264.193(e)

The secondary containment to the tank is a continuous, concrete slab with the slab extended up the dike. Containment is designed to hold 100 percent of the capacity of T-2007 and plus a 24-hour 25-year rainfall event. The secondary containment is inspected daily for any cracks or gaps and any that are found are immediately repaired.

8.7.5 Ancillary Equipment: §264.193(f)

Underground piping used to transfer hazardous waste to T-2007 is double-walled. In general, the piping is very simple, with very few connections. Operations personnel inspect the piping as part of their daily duties.

9.0 Appendices and Attachments

- Appendix A – Part A Application
- Appendix B – Waste Analysis Plan
  - Appendix B Attachment 1
  - Appendix B Attachment 2
- Appendix C -Inspection Schedule
  - Appendix C-1 Tank 2007 Inspection Log
  - Appendix C-2 Tank 2007 Subpart CC Inspection Log
  - Appendix C-3 SWRP Inspection Log
- Appendix D – Tank 2007 Construction
- Appendix E – Contingency Plan
- Appendix F – SPCC Plan
- Appendix G – Figures
- Appendix H – Personnel Training Program
- Appendix I – Tank 2007 Closure Plan
- Appendix J – SWRP Closure Plan
- Appendix K – Stormwater Retention Pond Post-Closure Plan
- Appendix L – Post-Closure Cost Estimate for SWRP
- Appendix M – Demonstration of Financial Assurance
- Appendix N – Insurance Information
- Appendix O – SWMU Information
- Appendix P – August 2016 SWRP Post-Closure Groundwater Monitoring Report
- Appendix Q – Semi-Annual Groundwater Remediation Progress Report
- Appendix R – 90-Day Follow-Up Request and ODEQ Response
- Appendix S – Corrective Action Program
- Appendix T – Solid Waste Management Units
- Attachment 1 – 2005 Operations and Post-Closure Permit
- Attachment 2 – Consent Order 15-056
- Attachment 3 – Extension Approval