FACT SHEET/STATEMENT OF BASIS

Notice of Intent to Approve a Class 3 Permit Modification to Grant Corrective Action Complete Status for One Solid Waste Management Unit and Two Areas of Concern Listed in the RCRA Hazardous Waste Permit and a Modification to Combine Three Areas of Concern into Three Existing Solid Waste Management Units and Remove Eleven Areas of Concern from the RCRA Permit and Incorporate Revisions and Additions to the RCRA Permit Language and Update Facility Figures

RCRA Permit Number NMD000333211

Western Refining Southwest, Inc. Gallup Refinery
June 2017

State of New Mexico
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

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Fact Sheet / Statement of Basis

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Under the authority of the New Mexico Hazardous Waste Act (Section 74-4-1 et seq., New Mexico Statutes Annotated (NMSA) 1978, as amended, 1992) and the New Mexico Hazardous Waste Management Regulations (20.4.1 [New Mexico Administrative Code] NMAC), the New Mexico Environment Department (NMED) intends to approve, pending public input into this decision, a Class 3 permit modification request (PMR) received from Western Refining Southwest, Inc. Gallup Refinery (Western or the Permittee) for the 2013 RCRA Hazardous Waste Permit, effective October 2013 (Permit) pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42(c)).

If approved, the proposed modifications would grant Corrective Action Complete (CAC) status for one Solid Waste Management Units (SWMU) and two Areas of Concern (AOC) listed in the Permit. Currently, Table G-1 in Permit Appendix G lists SWMUs and AOCs where corrective action is required to characterize and remediate, as necessary, past releases of hazardous wastes or hazardous constituents. If this modification is approved by NMED, SWMU 8 (Railroad Rack Lagoon and Fan-Out Area), AOC 19 (East Fuel Loading Rack), and AOC 25 (Tank 573 - Kerosene Tank) will be transferred from Appendix G, Table G-1 to Appendix G, Table G-3 that lists SWMUs and AOCs with the status of Corrective Action Complete Without Controls. The modification will also include modification of Appendix E, Table E-2 which lists the Corrective Action Submittal Schedule to the units noting corrective action documents have been "Submitted". The redline revisions of the tables are included as Attachment 1. A discussion of the units that will receive CAC status is included in Section 9.

Additionally, if approved the proposed modification would modify Table E-2 (Corrective Action Submittal Schedule) and Table G-1 (Solid Waste Management Units and Areas of Concern Requiring Corrective Action) to combine several AOCs into several existing SWMUs. AOC 32

(Flare and Ancillary Tanks) is to be combined with SWMU 14 (Old API Separator) to be called SWMU 14, AOC 33 (Storm Water Collection System) will be combined with SWMU 12 (Contact Wastewater Collection System) to be called SWMU 12, and AOC 20 (Crude, Slop and Ethanol Unloading Facility) will be combined with AOC 21 (Main Loading Racks), AOC 22 (Loading Rack Additive Tank Farm), and AOC 23 (Retail Fuel Tank Farm) to be renamed AOC 35). The revisions, highlighted in red-line strike out, are included in Attachment 1.

The schedule for corrective action submittal dates in Appendix E, Table E-1 will also be updated, if the modification is approved, to reflect that corrective action documents have been submitted, some units are deferred and to provide updated dates for other submittals. Proposed deferred units include: SWMU 2 (Evaporation Ponds), SWMU 3 (Empty Container Storage Area/Heat Exchanger Bundle Cleaning Pad), SWMU 6 (Tank Farm), SWMU 7 (Fire Training Area), SWMU 12 (Contact Wastewater Collection System/Stormwater Collection System), and AOC 15 (New API Separator). Units where corrective action documents were previously submitted to NMED include: SWMU 4 (Old Burn Pit), SWMU 5 (Landfill Areas), and SWMU 10 (Sludge Pits). Units where dates for submittals are proposed to be extended include: SWMU 9 (Drainage Ditch and Inactive Landfarm), SWMU 11 (Secondary Oil Skimmer), SWMU 13 (Drainage Ditch Between API Evaporation Ponds and Neutralization Tank Evaporation Ponds), and AOC 35 (Main Loading Racks, Crude, Slop (Transmix) and Ethanol Unloading Facility/Loading Rack Additive Tank Farm/Retail Fuel Tank Farm). The modifications are included as redline in Attachment 1.

Under a Settlement Agreement dated January 2017, eleven AOCs are proposed to be moved from the RCRA Permit to a Consent Order. The AOCs to be moved to a Consent Order include: AOC 16 (New API Separator Overflow Tanks), AOC 17 (Railroad Loading/Unloading Facility), AOC 18 (Asphalt Tank Farm), AOC 24 (Crude Oil Tank Farm), AOC 26 (Process Units), AOC 27 (Boiler and Cooling Unit Area), AOC 28 (Warehouse and Maintenance Shop Area), AOC 29 (Equipment Yard and Drum Storage Area), AOC 30 (Laboratory), AOC 31 (Tanks 27 and 28), and AOC 34 (Scrap Yard). The units will be further evaluated to determine whether additional investigation and corrective action are required or if corrective action is not necessary at the units. A discussion of the units is included in Section 9.

Proposed changes to Permit language include: revisions to Permit Sections IV.B.3.a and IV.B.3.b, a replaced section IV.B.4 regarding reporting of spills and releases and standards to define how new SWMUs and AOCs are added to the Permit; addition of a dispute resolution provision in Section I.J.14; addition of Section IV.B.7 which addresses work already completed; and a note in Attachment E, Table E-2 to define "deferred" for the Corrective Action Submittal Schedule. The additional sections result in changes to the sequence of section numbers. All changes to the Permit are in redline in Attachment 1.

Figures depicting the Facility and its SWMUs and AOCs will also be updated should this modification be approved as proposed. The updated figures will be included as Permit Attachment J and are attached to this Fact Sheet in Attachment 1. Figures depicting the location of the SWMUs and AOCs proposed for Corrective Action Complete without Controls are included in this Fact Sheet in Figure 1. AOCs proposed to be moved to the Consent Order are included in this Fact Sheet in Figure 2.

Section 1. Facility Description

Western Refining Southwest, Inc's Gallup Refinery (the Facility) is an operating refinery that has been in service since the 1950's. The Facility is located in McKinley County, New Mexico approximately 17 miles east of Gallup at Exit 39 of Interstate 40 (I-40), Jamestown, New Mexico. The refinery is situated on an 810 acre tract of land. Specifically, the Gallup Refinery is located in Township 15 North, Range 15 West, Sections 28 and 33 and the northern one-third of Section 4 of the New Mexico coordinate system. The Facility has a crude oil capacity of approximately 32,000 barrels (bbls) per day. The current and historic operations of the Facility are practices related to processing crude oils into final products which include propane, butane, naphtha, gasoline, diesel (low sulfur and ultra-low sulfur), asphalt and residual fuel.

Section 2. History of Investigation

The Permit requires investigation of SWMUs and AOCs listed in Appendix G, Table G-1. Section 9 of this fact sheet briefly describes the location, history, evaluation of relevant information, and the basis for determination for each of the SWMUs proposed for corrective action complete without controls. More detailed descriptions of the SWMU and AOCs can be found in the permit modification request submitted by the Permittee and the references listed at the end of this fact sheet, which constitute the administrative record for this action.

The following sites are the subject of the proposed permit modifications for Corrective Action Complete without Controls:

SWMU or AOC	Description in Permit
SWMU 8	Railroad Rack Lagoon and Fan-Out Area
AOC 19	East Fuel Loading Rack
AOC 25	Tank 573 (Kerosene Tank)

The Permit requires investigation of SWMUs and AOCs listed in Appendix G, Table G-1; however, as part of a Settlement Agreement the following AOCs will be moved from the Permit to a Consent Order to determine whether they meet the definition of an AOC. If NMED determines that a unit meets the definition, then the unit will be restored to the Permit for corrective action. Section 10 of this Fact Sheet describes each unit, its history, and the basis for moving it from the Permit. More detailed descriptions of the AOCs can be found in the references listed at the end of this fact sheet, which constitute the administrative record for this action.

The following sites are the subject of the proposed Permit modification to be moved to a Consent Order for further evaluation:

SWMU or AOC	Description in Permit
AOC 16	New API Separator Overflow Tanks
AOC 17	Railroad Loading/Unloading Facility
AOC 18	Asphalt Tank Farm (tanks 701-709, 713, 714)
AOC 24	Crude Oil Tank Farm (tanks 101 and 102)
AOC 26	Process Units
AOC 27	Boiler and Cooling Unit Area
AOC 28	Warehouse and Maintenance Shop Area
AOC 29	Equipment Yard and Drum Storage Area
AOC 30	Laboratory

SWMU or AOC	Description in Permit
AOC 31	Tanks 27 and 28
AOC 34	Scrap Yard

Section 3. Administrative Record

The Administrative Record for this proposed action consists of the permit modification request, the draft Permit, this Public Notice, the Fact Sheet, a Settlement Agreement dated January 2017, and other supporting documentation the Department relied on to develop the draft permit. The Administrative Record may be reviewed, with prior appointment, at the following location during the public comment period.

NMED - Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6313
Phone: (505) 476-6000
Monday – Friday: 8:00 a.m. to 5:00 p.m.
Contact: Pam Allen

A copy of the draft Permit, this Public Notice, and the Fact Sheet are also available on the Department's website at: https://www.env.nm.gov/hazardous-waste/western-refining-gallup/. To obtain a copy of the Administrative Record or a portion thereof, please contact Ms. Pam Allen at (505) 476-6000, or at address given above. The Department will provide copies, or portions thereof, of the Administrative Record at a cost to the requestor.

Section 4. Public Participation

The Department issues this public notice on **June 23, 2017**, to announce the beginning of a 60-day comment period that will end at **5:00 p.m. MDT, August 22, 2017**. Any person who wishes to comment on the revised draft Permit or request a public hearing should submit written or electronic mail (e-mail) comments with the commenter's name and physical address to the address below. Only comments and/or requests received before **5:00 p.m. MDT** on **August 22, 2017** will be considered.

Mr. John Kieling
Hazardous Waste Bureau - New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6313
Phone: (505) 476-6000
E-mail: john.kieling@state.nm.us
Ref: WRG Permit

Written comments must be based on reasonably available information and include, to the extent practicable, all referenced factual materials. Documents in the administrative record need not be re-submitted if expressly referenced by the commenter. Requests for a public hearing must provide: (1) a clear and concise factual statement of the nature and scope of the interest of the person requesting the hearing; (2) the name and physical address of all persons whom the requestor represents; (3) a statement of any objections to the draft Permit, including specific references to any conditions; and (4) a statement of the issues which the commenter proposes to

raise for consideration at the hearing. The Department will provide a thirty day notice of a public hearing, if one is scheduled.

The Department must ensure that the draft Permit is consistent with the New Mexico Hazardous Waste Management Regulations. All written comments submitted will be considered in formulating a decision on issuance of a final permit and may cause the revised draft Permit to be modified. The Department will respond in writing to all public comments. This response will specify which provisions, if any, of the draft Permit have been changed in the final permit and the reasons for the changes. All persons presenting written comments or who requested notification in writing will be notified of the decision by mail. These responses will also be posted on the Department's website.

Section 5. Next Steps

After consideration of all public comments received, NMED will issue a final decision that will approve, modify or deny the request. If NMED modifies or denies the request, NMED will provide written justification for the decision to the Permittee by mail. NMED will make the final decision publicly available and will notify the Permittee and each person who submitted written comments of the final decision. The final decision will constitute a final agency decision and may be appealed as provided in the Hazardous Waste Act.

Section 6. Contact Person for Additional Information

For additional information, contact the following individual:

John Kieling, Chief
Hazardous Waste Bureau - New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313
Telephone: (505) 476-6000
Fax: (505) 476-6030
e-mail: john.kieling@state.nm.us

Section 7. Arrangements for Persons with Disabilities

Any person with a disability and requiring assistance or auxiliary aid to participate in this process should contact Mr. Vincent Velarde, NMED, Room S-4303, P.O. Box 5469, 1190 St. Francis Drive, Santa Fe, New Mexico, 87502-6110, TDD or TDY users please access Mr. Velarde's number via the New Mexico Relay Network at 1-800-659-8331.

Section 8. NONDISCRIMINATION STATEMENT

NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Part 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non- discrimination programs, policies or procedures, you may

contact:

Kristine Pintado, Non-Discrimination Coordinator
New Mexico Environment Department
1190 St. Francis Dr., Suite N4050
P.O. Box 5469
Santa Fe, NM 87502
(505) 827-2855
nd.coordinator@state.nm.us

If you believe that you have been discriminated against with respect to a NMED program or activity, you may contact the Non-Discrimination Coordinator identified above or visit our website at https://www.env.nm.gov/non-employee-discrimination-complaint-page/ to learn how and where to file a complaint of discrimination.

Section 9. Descriptions of SWMUs and AOCs Proposed for Corrective Action Complete without Controls

9.A SWMU 8, Railroad Rack Lagoon and Fan-Out Area

The Railroad Rack Lagoon and Fan-Out Area (SWMU 8) was placed into service sometime between the late 1950s and early 1960s. The lagoon was constructed to receive and hold wastewater from the railroad loading rack facility (AOC 17). Wastewater entered the basin via the concrete inlet pipe on the south end of the lagoon and exited at the north end via an overflow ditch. The Railroad Rack Lagoon was an earthen basin approximately 30ft by 130ft by 6ft with an approximate capacity of 175,000 gallons located north of the Tank Farm (Figure 1). Effluent was distributed via the overflow ditch to a fan-out area which measured approximately 200ft by 200ft with a two-to-three-ft-high earthen perimeter berm. The soils beneath the SWMU consist of silt and clay. The clay fraction increases with depth. Groundwater was not encountered during field activities; however, the clays are interspersed with sand layers and a moist-to-wet layer was observed at 22 feet below ground surface (ft bgs) in a soil boring advanced during one of the investigations.

9.A.i History

A Phase I RCRA Facility Investigation was conducted in 1990 (Giant, 1991). Soil samples were collected from soil borings from the Railroad Rack Lagoon, Overflow Ditch, and Fan-Out Area in June 1990. Samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and metals. At the lagoon, soil samples were collected from the perimeter of the lagoon using vertical borings and from beneath the lagoon using angled borings.

Upon completion of RCRA Facility Investigation (RFI) activities, the Facility submitted a Voluntary Corrective Action Plan for SWMU 8 (Applied Earth Environmental, 1992). The Facility proposed to close the Railroad Rack Lagoon by removing the sewer drainage system and empty the lagoon of oily liquids and analyze oily soils prior to removal. In-situ bioremediation was chosen to continue further remediation of hydrocarbons remaining in soils after the initial removal actions. The EPA issued a letter on January 7, 1994, that approved the Phase I RFI and directed the Facility to proceed with implementation of the Corrective Action Plan with the requirement to conduct additional monitoring and sampling activities after the proposed corrective actions were completed

(EPA, 1994).

The Correction Action Plan was partially implemented in March, 1994. In a June 28, 1994, Quarterly Progress Report the Permittee reported completion of piping modifications and removal of the remaining water from the lagoon for disposal in the process wastewater system. However, on October 20, 1999 NMED observed the Railroad Rack Lagoon to be full of oily water and stained soil surrounding the lagoon. Subsequent actions conducted from this point through 2004 are not well documented in the records, likely no activities were conducted during this time.

Excavation began at the Railroad Rack Lagoon in November 2004. Soils removed from the lagoon were placed in the refinery's OCD permitted Northeast and Central Landfarms. Soils were excavated beyond the limits of the original lagoon, the excavation was 170 feet long by 35 feet wide and 12 feet deep with approximately 2,119 cubic yards of soil removed (Giant, 2006). This was the first in a series of excavations to remove contaminated soils, because confirmation samples repeatedly indicated that additional excavation was required at several locations based on a comparison to the NMED residential total petroleum hydrocarbons (TPH) screening level of 200 mg/kg (NMED, October 2006).

Additional excavation at the southeast sidewall and the northwest sidewall were conducted in August 2005. During this time the inlet pipe from the Railroad Rack was removed and contaminated soils were excavated along its length and confirmation samples were collected from beneath the pipe and at the sidewall excavation areas (Giant, 2006). Three of the "southeast sidewall" samples contained TPH [diesel range organics (DRO) or motor oil range organics (MRO)] concentrations greater than 200 mg/kg and additional soil was excavated. Confirmation samples collected from beneath the inlet pipe also contained concentrations of TPH above the 200 mg/kg action level. The excavations at the southeast sidewall area and beneath the inlet pipe were expanded until confirmation samples indicated successful removal of soils except for two samples that contained TPH-DRO concentrations of 210 and 310 mg/kg, respectively (Giant, 2006). The excavations were backfilled in October 2005. In June 2006, the NMED’s Notice of Deficiency (NOD) letter on the Remedy Completion Report SWMU #8, Rail Road Rack Lagoon (NMED, 2006) required the Facility to expand the investigation to test for the presence of residual contamination in the Overflow Ditch and Fan-out Area.

The Facility submitted a work plan to investigate the Overflow Ditch and Fan-Out Area (Giant, 2006b). After modifications to the work plan required by NMED (NMED, 2006b), the subsurface soil investigation was conducted in October 2006. Soil samples were collected from ten sample locations and samples were collected at two ft below ground surface (bgs) using a hand auger, then test pits were excavated at these locations to a depth of four ft bgs and finally, a hand auger was used to advance the remaining foot to collect a sample at five ft bgs. The soil samples were analyzed for total petroleum-oil-range organics (TPH-ORO), semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs), RCRA metals, and cyanide.

Cyanide, VOCs, and SVOCs were not detected in the soil samples. Barium, chromium, and lead were the only metals detected and the reported concentrations were all below their respective residential soil screening levels. TPH-ORO was the only analytical result with concentrations that exceeded the NMED screening levels (Trihydro, 2007b). Soil samples obtained from Test Pits 8-

8 and 8-9 contained TPH-ORO concentrations exceeding NMED's industrial cleanup standard of 890 mg/kg (industrial - #3 and #6 Fuel Oil). Both pits were expanded in May 2007 and further sampling was conducted to delineate the contamination. Soil confirmation sample results indicated that contaminated soils at test pit 8-9 had been successfully removed; however, exceedances still existed at the test pit 8-8 location. This was the first in a series of excavations that were conducted to achieve soil cleanup standards at the Fan-Out Area.

Two more sampling events were conducted in August and December 2007 to delineate the extent of the TPH-ORO contamination and to approximate an estimated volume of material to be excavated. Excavation began in March 2009 and was completed in October 2009. The excavation was divided into four areas with excavation depths of three feet, five feet, seven feet, and 13 feet at Area 1, Area 2, Area 3, and Area 4, respectively. Sampling was conducted from March 2009 through August 2010, until confirmation samples verified that soil with TPH concentrations exceeding the NMED cleanup standard of 890 mg/kg (industrial - #3 and #6 fuel oil) had been removed (Trihydro, 2010). NMED approved this report with modifications (NMED, 2010a) related to the disposition of investigation derived wastes and the source of backfill used. The Facility submitted a response which addressed these questions and the excavations in the Overflow Ditch and Fan-Out Area were subsequently backfilled pursuant to NMED's approval (Western, 2010a).

The NMED issued an NOD (NMED, 2010b), regarding the *Remedy Completion Report for Railroad Rack Lagoon (SWMU No. 8) Revised Report*. NMED directed Western to conduct additional sampling in the vicinity of an exceedance. NMED provided clarification that additional investigation was only required if Western sought to pursue cleanup to the residential standard of 200 mg/kg to obtain Corrective Action Complete without Controls (NMED, 2010c). Western responded to the Disapproval letter (Western, 2011) and NMED subsequently issued an Approval with Modifications on (NMED, 2011). Western decided not to pursue additional sampling and/ or remediation.

9.A.ii Evaluation of Investigation Results

The results of the Phase I investigation demonstrated the presence of volatile organics (ethylbenzene and xylenes) and semi-volatile organics (1-methylnaphthalene, naphthalene, and phenanthrene) at depths of 5 to 8 feet at the Lagoon. At the Overflow Ditch semi-volatiles (1-methylnaphthalene, naphthalene, and phenanthrene) were detected with the highest concentrations at depths of 2.5 feet. Soil samples collected at the Fan-Out Area also contained the same semi-volatile organics and two volatiles (toluene and xylenes) were detected at a depth of 4.5 feet. Metals were present in many of the samples, but generally at low concentrations.

Rather than continue to delineate the contaminated soils or pursue further bioremediation, the Facility began excavating soils and used confirmation sampling to determine whether additional excavation was necessary. Through a series of several removal actions, the Permittee achieved soil cleanup within the Railroad Rack Lagoon so that most soils meet a soil screening level of 200 mg/kg of TPH. At the Fan-Out Area, a screening level of 800 mg/kg was used for comparison and through a series of soil excavations, the Permittee removed most soils above 800 mg/kg in the Fan-Out Area. In February 2012 NMED revised the TPH screening levels and the lowest or most conservative residential soil remediation standard for TPH increased to 1,000 mg/kg; therefore,

the remaining concentrations detected in soils meet the residential soil screening level.

9.A.iii Basis of Determination

The excavation of soils in the Railroad Rack Lagoon and the Railroad Rack Lagoon Fan-Out Area removed soils that contained contaminant concentrations above the residential soil screening level and therefore, the site meets the criteria for Corrective Action Complete without Controls.

9.B AOC 19, East Fuel Loading Rack

The East Fuel Loading Rack (AOC 19) was located near the southeast corner of the Process Area (AOC 26) and north of the Hot Asphalt/Hot Oil Tank Farm (AOC 18) (Figure 1). The former East Fuel Oil Loading Rack began operation sometime before 1997; however, there is no recorded history of the site use prior to 1997. Site personnel indicate the area may have previously used to load asphalt. The East Fuel Oil Loading Rack covered an area approximately 60 feet by 90 feet. Petroleum products (fuel oil) were loaded onto trucks from the loading rack. In 2011, the unit was removed to facilitate construction of the new ElectroStatic Precipitator / CO Boiler (ESP/COB) unit. The excavation for the ESP/COB unit resulted in the removal of a large volume of soil, which included the entire area where the East Fuel Oil Loading Rack was located. The depth to groundwater at the site is estimated to be 25 to 35 feet below ground surface.

9.B.i History

A site inspection conducted by the Energy Minerals and Natural Resource Department, Oil Conservation Division (OCD) regarding a fire at the Alkylation Unit on October 11, 2006 noted an area of stained soil at the East Fuel Loading Rack (NMOCD, 2006a, photo of truck load-out spill area). NMED was included in related correspondence with NMOCD pertaining to this area of stained soils identified during the site inspection (NMOCD, 2006b). Soil samples were collected and analyzed in November 2006 with subsequent removal of contaminated soils to a depth of approximately 2 feet bgs. The Permittee included laboratory reports in their Supplemental Information; however, it was not possible to discern which laboratory reports included with the submittal were associated with the soil removal action, because figures were not included in the submittal that provided sampling locations and the project descriptions were vague (i.e., “misc. soil samples, fuel oil rack”; “misc soil samples, gas con”; “misc. soil samples, #4 oily soil”). In addition, the samples were not analyzed for TPH (Western, 2015). In 2007, Western installed a concrete pad with berms to contain potential spills that could occur during loading operations.

To support construction of a new ESP/COB unit, all components of the East Fuel Loading Rack and underlying soils were removed in 2011 during site preparation. Discrete confirmation soil samples were collected from the bottom of the excavation for the ESP/COB foundation and waste characterization samples were collected from the excavated soils. The excavation, which covered an area larger than the loading rack and measured 82 feet by 315 feet, extended to a depth of approximately 7 .5 to 11.5 feet bgs (Western, 2015). Twelve soil samples were collected in December 2011 at the ground surface; however, no samples were collected at the sidewalls of the excavation and all samples were analyzed for hazardous waste characteristics rather than risk evaluation. The soil analytical testing included TPH and the results demonstrate that low levels of TPH-DRO remain in the soils; the highest detected concentration was 840 mg/kg DRO. The vertical extent of contamination was addressed by the soil removal. The horizontal extent was not confirmed by sampling; however, the excavation for the base of the new unit was larger than the footprint of the loading rack.

9.B.ii Evaluation of Investigation Results

No investigations were conducted at the East Fuel Loading Rack under the RCRA Permit. Soil removal occurred to address stained soils in 2007 and additional soil removal was conducted in 2011 for construction purposes. Confirmation sampling and over excavation demonstrate that contaminated soils were likely removed from the AOC prior to construction of the new ESP/COB unit.

9.B.iii Basis of Determination

Excavation in 2011 for construction of the new ESP/COB unit removed soils from the East Fuel Loading Rack and beyond its footprint. The construction excavation actions removed contaminated soils from the area prior to construction of the new unit. The unit status will be changed to corrective action complete without controls.

9.C AOC 25, Tank 573 – Kerosene Tank

Tank 573, Kerosene Tank (AOC 25) was an aboveground steel tank with a fixed steel roof. It was located south of the Railroad Loading Rack and east of the Tank Farm (Figure 1). The tank was 10 feet in diameter and 18 feet in height. It was designed to hold approximately 250 barrels of liquid, but was instead used as a vacuum assist for unloading tank cars at the Railroad Loading Rack (AOC 17). The lines for the tank were located aboveground. The tank was placed into service prior to 1997 and was removed in 2012. It was replaced by a new tank used to hold nitrogen.

9.C.i History

The area around the tank was inspected when the tank was removed. There were no indications of a release from tank or associated piping and no holes were observed in the tank. After the tank was removed, a concrete pad with retaining walls was constructed and a new tank was installed (Western, 2015)

9.C.ii Evaluation of Investigation Results

Investigations for releases from Tank 573 were not conducted with the exception of visual inspections.

9.C.iii Basis of Determination

Based on the use of the tank as a vacuum system, it is unlikely that releases occurred during its lifetime. When the tank was removed, the tank was inspected and no evidence of holes or corrosion were observed. No observations of ground surface staining were observed when the tank was removed from service.

Section 10. Descriptions of AOCs Proposed to be Moved to the Consent Order

10.A AOC 16, New API Separator Overflow Tanks

The API Separator Overflow Tanks (AOC 16) consisted of a series of Baker Tanks used when refinery wastewater flow to the New American Petroleum Institute (API) Separator (NAPIS) (AOC 15), an oil/water separator, was exceeded its capacity, during machinery failure, or during weather events. The tanks were used to hold NAPIS overflow which consists of untreated process wastewater. The Baker Tanks were located just north of the NAPIS and connected to the NAPIS by above ground piping (Figure 2).

10.A.i History

Prior to 2010 there was one 500 bbl capacity Baker Tank used to receive overflows from the NAPIS during excessive flow events. The tank also experienced overflows. After multiple overflows of the NAPIS and the Baker Tank, NMED required the Permittee to submit an Interim Measures Work Plan to propose methods to eliminate the flow of untreated wastewater onto the ground (NMED, 2010). The Permittee submitted a response to the requirement dated April 2010 (Western, 2010) which proposed installation of four additional 500 bbl capacity Baker (or Frac) Tanks north of the NAPIS unit connected to the NAPIS by piping. The four additional Baker tanks were installed just north of the NAPIS and existing Baker tank within an earthen containment berm in May 2010.

Reported releases affecting the original Baker overflow tank include reported releases of spills on June 23, 2007, June 10, 2009, September 5, 2009, and December 8, 2009. Additional reported overflows affecting the NAPIS and NAPIS Overflow Tanks included releases on July 30, 2010, and August 2, 2010, April 12, 2012.

The Baker Tanks were removed from service in August or September 2011 and replaced with dissolved gas flotation (DGF) feed tanks and piping for the Wastewater Treatment System. The DGF Feed tank also experienced overflows as documented in a spill report dated August 5, 2014.

10.A.ii Evaluation of Investigation Results

Generally, cleanup of the NAPIS and Overflow Tank areas consisted of the use of vacuum trucks to remove liquid waste and then removal of visibly contaminated soils and rock debris. DRO-and GRO-contaminated soils at concentrations above industrial soil screening levels were left in place (Western, 2010). Soils affected by releases from the NAPIS contain listed hazardous wastes K051, F037, and F038. In the past, the Permittee requested contained-in determinations for soil cleanup around AOC 15 and AOC 16; however, no requests have been submitted since 2009. Based on the lack of documentation in the administrative record regarding cleanup activities and confirmation sampling the record for remediation at this AOC is incomplete. The potential exists that residual contamination remains in surface and subsurface soils. No investigative soil sampling was reported to NMED prior to replacing the overflow tanks with the DGF feed tank.

10.A.iii Basis of Determination

During mediation NMED agreed to move AOC 16 to a Consent Order to give the Permittee time to gather additional information to demonstrate whether the unit meets the definition of a SWMU or AOC. There was no available soil or groundwater data regarding the AOC. An AOC Assessment Report is due to NMED no later than September 30, 2018.

10.B AOC 17, Railroad Loading/Unloading Facility

The Railroad Loading/Unloading Facility was constructed when the refinery was built in the 1950s and has remained in continuous use. It is located near the northeast corner of the Facility boundary to the east of the Process Unit Area (Figure 2). The railroad spur track and railcar loading rack are used to transfer feedstocks and various products and chemicals to and from refinery storage tanks into railcars.

10.B.i History

The Railroad Loading/Unloading Facility is still in use. Originally, a manhole and pipe conveyed oily water and runoff from the loading/unloading facility to the Railroad Rack Lagoon and Fan-Out Area (SWMU 8). Once cleanup of the Railroad Rack Lagoon and Fan-Out Area began, the pipe that conveyed oily waste and water to the lagoon was removed and contaminated soils along the pipeline were excavated. The manhole was abandoned in-place by filling it with concrete (Western, 2015). Currently stormwater and oily waste released at the loading rack drains to a large in-ground concrete lift station. The lift station is approximately 8 feet wide, 8 feet long and 18 feet deep. There are additional sumps north of the lift station and west of the tracks for overflow. If a significant volume of separate phase product accumulates, then it is removed with a vacuum truck that transports the product to the slop oil rack. Stormwater is pumped directly to the wastewater sewer system that drains to the NAPIS (SWMU 12 and SWMU 14, respectively) (Western, 2015).

The manhole and concrete pipe were removed during remediation of SWMU 8, the Railroad Rack Lagoon and Fan-Out Area, in 2005. The pipe conveyed oily water from the railroad rack to the lagoon over a distance of approximately 250 feet. The pipe was buried three feet underground and was underlain by 6 inches of sand. Excavation of soils along the location of the inlet pipe extended to approximately one foot below the bottom of the pipe to address TPH contamination (Giant, 2006). Similar contaminants may be present at the railroad rack because of transfer operations and small releases over the lifetime of the AOC. There were no records of spills reported at the loading rack; however, a reported release of gasoline occurred on May 7, 2017.

10.B.ii Evaluation of Investigation Results

No investigations have been conducted at the AOC.

10.B.iii Basis of Determination

During mediation NMED agreed to move AOC 17 to the Consent Order to give the Permittee time to gather additional information to determine if the unit meets the definition of a SWMU or AOC. There was no available soil or groundwater data regarding the AOC. An AOC Assessment Report is due to NMED no later than December 31, 2018.

10.C AOC 18, Asphalt Tank Farm (Tanks 701-709, 713, 714)

The Asphalt or Hot Oil Tank Farm is located south of the Process Units and consists of ten above ground storage tanks in an earthen area with an earthen secondary storage berm (Figure 2). The tanks are steel tanks that have been in service since the 1960s which hold FCC feedstock, fuel oil, and heavy oil stock. Several of the tanks (702, 708, 709) are scheduled for demolition according to a *2014 Refinery Tank Storage Inspection Chart* and one tank that had been located in the unit, tank 713, was demolished September 17, 2014 (Western, 2015b).

10.C.i History

There is a history of releases at the unit and the unit is currently in use. On September 16, 2007, approximately 200 barrels (8,400 gallons) of heavy oil (feed oil for fluidized catalytic cracking) was spilled when operators erroneously attempted to pump the oil into a fill tank (Release Notification dated Sept. 19, 2007); on March 19, 2008, approximately 5 to 6 barrels (210 to 252 gallons) of fuel oil were spilled when a pump failed (Release Notification dated March 26, 2008); on February 7, 2015 a release of FCC feed from Tank 703 occurred and approximately 50 barrels (2,100 gallons) of FCC feed was released to the ground; on February 5, 2016 Tank 714 was

overfilled and approximately 800 to 1,543 barrels (33,600-64806 gallons) of FCC feedstock were released to the ground surface. Reporting and records of cleanup activities for releases at the unit are incomplete. During the cleanup of the February 2016 release, soil was excavated to three feet below the ground surface indicating the area was affected by historic releases rather than the immediate release (Western, 2017). Additionally, photographs taken during an inspection in 2001 show streaks of oil on pipes and valves, oil and oil staining on the ground, and other evidence of releases around the tanks.

10.C.ii Evaluation of Investigation Results

There have been no investigations conducted at the AOC.

10.C.iii Basis of Determination

During mediation NMED agreed to move AOC 18 to a Consent Order to give the Permittee time to gather additional information to demonstrate if the unit meets the definition of a SWMU or AOC. There was no available soil or groundwater data regarding the AOC. An AOC Assessment Report is due to NMED no later than March 31, 2019.

10.D AOC 24, Crude Tank Farm (Tanks 101 and 102)

The Crude Oil Tank Farm is located northwest of the Process Area and north of the Retail Fuel Oil Tank Farm (Figure 2). The Crude Oil Tank Farm consists of two above ground steel tanks with 80,000-bbls capacity each. Tank 101 was installed in 1957 and Tank 102 was installed in 1991. The tanks were constructed on earthen containment and are surrounded by an earthen berm.

10.D.i History

The Crude Oil Tank Farm has been in use since the Facility opened in the 1950s. There have been no investigations conducted at the AOC. One reported release occurred on December 31, 2006, when approximately 6 barrels (250 gallons) of crude oil were spilled onto the ground when a process sewer drain line from the water draw on Tank 102 became clogged causing the drain box to overflow (Release Notification dated Jan 2, 2006).

In 2007 the Permittee proposed to investigate two seeps located downgradient of Tank 102. As part of the investigation an electromagnetic (EM) survey, groundwater sampling, and soil sampling were conducted (TriHydro, 2007). It is not clear if the crude oil tanks contributed to the source of the seeps, because investigation was not completed. Another seep near Tanks 101 and 102 was discovered in 2013, the "Hydrocarbon Seep", a primary source of the seep was the Contact Wastewater Collection System/Stormwater Collection System (SWMU 12). The seeps discovered in 2007 likely also received discharges from this source; however, it cannot be determined if the staining and contamination observed within the AOC 24 containment berm is also from SWMU 12 or from historic releases from the crude oil tanks without further investigation.

10.D.ii Evaluation of Investigation Results

There have been no investigations conducted at AOC 24. However, during cleanup for the release of crude oil in December 2006 the Permittee removed contaminated soils and observed additional soil contamination near Tank 102. In an email to NMED dated June 11, 2007 the Permittee noted "[o]il impacted soils became evident at depth in the additional excavation. The oil impacted soil appears to be resulting from past spillage or a historical nature. We excavated in several additional

locations in the bermed area. The oil impaction exists also in these excavations." It does not appear that the area was further investigated after 2007 and no investigative soil sampling was conducted; therefore, the possibility exists for impacted soils to remain.

The investigation into the seeps near Tanks 101 and 102 demonstrated the presence of elevated levels of DRO and MRO (13,000 mg/kg and 14,000 mg/kg, respectively) on the southwest side of Tank 102. The Seep 1 test pit was located against an embankment just west of Tank 102 and was excavated to a total depth of 3 ft bgs. During the excavation a black seam was encountered. Soil samples were collected from above and below the black seam, directly from the black seam, and from the water-bearing sand layer. The water-bearing sand layer is located at a depth of approximately 1.5 to 2 ft bgs. The soil sample collected from the black seam contained DRO at 3,600 mk/kg. The ground water within Seep 1 contained 13.0 mg/L DRO and 33.0 ug/L MTBE (Trihydro, 2008). At the time, the Permittee did not continue with proposed investigations into the source of the seeps or the source of the black seam.

10.D.iii Basis of Determination

During mediation NMED agreed to move AOC 24 to a Consent Order to give the Permittee time to gather additional information to demonstrate if the unit meets the definition of a SWMU or AOC. There was no available soil or groundwater data regarding the AOC. An AOC Assessment Report is due to NMED no later than December 31, 2019.

10.E AOC 26, Process Units

The Process Units (AOC 26) are located south of the Tank Farm (SWMU 6). The Process Units sit within a 169,013 square feet (3.88 acres) area and are located on a flat man-made terrace at an elevation of approximately 6,950 feet (Figure 2). The AOC consists of the units used to process crude oil into various finished products. The units consist of crude distillation, hydrotreating for naphtha and distillate, reforming for high-octane gasoline production, fluid catalytic cracking unit (FCCU), an isomerization unit to increase the octane of other gasoline streams that enhance high-octane gasoline production, and an alkylation unit to convert produced LPGs back into gasoline. The area includes both above-ground and below-ground piping.

10.E.i History

The process units have been in continuous use since the refinery first began operation in 1957. In December 2009 personnel discovered a seep coming from the ground in the process area where a product line carrying straight-run gasoline was leaking. A foam blanket was used to contain the gasoline; the product line was isolated and contaminated soil was excavated. Confirmation sampling was not conducted (Western, 2009). In April 2010, a leak from the naphtha hydrotreating unit (NHT) charge line was discovered, the line runs underneath the road from the process area to the tank farm. Approximately 740 gallons of sour naptha was recovered once the roadway was excavated (Western, 2010b). Another release occurred in September 2013 where a kerosene rundown line ruptured and approximately 15 barrels (630 gallons) of kerosene was released due to line corrosion along the kerosene hydrotreater (KHT) charge line between Tank-226 (kerosene holding tank) and the KHT unit in the process area. The release was contained along the pipe rack, which was formerly underground piping but was excavated in the early 2000s for easier access (Western, 2013). Drains and underground piping, valves, and connectors, and various process units are potential sources of leaks at AOC 26. Considering the age of the units, it is highly likely that

leaks have occurred over time from aging infrastructure.

10.E.ii Evaluation of Investigation Results

Because the Process Units are currently operating, and it would be impracticable to conduct investigation or extensive corrective action during operations; therefore, investigations have not been conducted at AOC 26.

10.E.iii Basis of Determination

During mediation NMED agreed to move AOC 26 to a Consent Order to give the Permittee time to gather additional information to determine if the unit meets the definition of a SWMU or AOC. There was no available soil or groundwater data regarding the AOC. An AOC Assessment Report is due to NMED no later than September 30, 2020.

10.F AOC 27, Boiler and Cooling Unit Area

The Boiler and Cooling Unit Area (AOC 27) is located to the north of the Process Area (Cooling Towers) and to the west of the Process Area (Boiler House). See Figure 2. The boiler and cooling units are part of the process of crude oil distillation. Boilers are used to generate process steam for various refinery operations. Crude oil is separated in various fractions based on boiling point, the crude oil is heated and vaporized in a fuel heater. Various fractions are separated by condensing and cooling products that are withdrawn. In a cooling tower system, part of the circulating water is removed as blowdown to prevent the build-up of dissolved solids in the system. Cooling tower blowdown is typically sent to wastewater treatment units in refineries via the sewer and may contain hydrocarbons.

10.F.i History

The units have been in continuous use since the refinery began operation in the 1950s. Chromate was historically used as a descaler/biocide in cooling units nationwide and likely was used in the past in the cooling unit at the Facility. Additionally, oily water was recorded as having been removed from the boiler house drain sump and sewer boxes in 2009 and 2010 (Vacuum Truck Logsheets for Sept. 2, 2009, Jan. 6, 2010, Feb. 4, 2010, Feb. 5, 2010, Feb. 10, 2010, Feb. 12, 1210, and Mar. 3, 2010) indicating releases have occurred.

10.F.ii Evaluation of Investigation Results

There have been no investigations at this AOC.

10.F.iii Basis of Determination

During mediation NMED agreed to move AOC 27 to a Consent Order to give the Permittee time to gather additional information to demonstrate whether the unit meets the definition of a SWMU or AOC. There was no available soil or groundwater data regarding the AOC. An AOC Assessment Report is due to NMED no later than March 31, 2020.

10.G AOC 28, Warehouse and Maintenance Shop Area

The Warehouse and Maintenance Shop Area are located west of the Process Area and south of the Heat Exchanger Bundle Cleaning Pad (Figure 2).

10.G.i History

The warehouse and maintenance shop area have been in use since refinery operations started in the

1950s. Floor drains and underground piping at AOC 29 are potential sources of releases. These facilities have managed used oil and industrial chemicals including solvents. Used oil and oil sludge was vacuumed from the site in October 2009 and January 2010 (Vacuum Truck Logsheets for Oct. 23, 2009, Jan. 18, 2010) indicating that releases have occurred.

10.G.ii Evaluation of Investigation Results

There have been no investigations at this AOC. However, a release from SWMU 12 included solvents that likely originated from operations at the AOC.

10.G.iii Basis of Determination

During mediation NMED agreed to move AOC 28 to a Consent Order to give the Permittee time to gather additional information to demonstrate if the unit meets the definition of a SWMU or AOC. There was no available soil or groundwater data regarding the AOC. An AOC Assessment Report is due to NMED no later than June 30, 2020.

10.H AOC 29, Equipment Yard and Drum Storage Area

The Equipment Yard and Drum Storage Area are located east of the Main Loading Racks, near the Warehouse area (Figure 2).

10.H.i History

AOC 30 has been used to store old equipment, which may have leaked residual petroleum or used oil, and also drums containing various chemicals, including liquids.

10.H.ii Evaluation of Investigation Results

There have been no investigations conducted at this site.

10.H.iii Basis of Determination

During mediation NMED agreed to move AOC 29 to a Consent Order to give the Permittee time to gather additional information to demonstrate whether the unit meets the definition of a SWMU or AOC. There was no available soil or groundwater data regarding the AOC. An AOC Assessment Report is due to NMED no later than December 31, 2020.

10.I AOC 30, Laboratory

Refinery laboratories analyze both hydrocarbon and water samples. The wastewater that is generated in the laboratory can be categorized as containing the following: spent/unused hydrocarbon samples; spent/unused wastewater samples; off-spec or spent laboratory solvents and reagents; discharges from sinks in the laboratory; and discharges from bottle washing systems in the laboratory. The laboratory is located near the main gate, west of the Process Area (Figure 2).

10.I.i History

The laboratory has been in service since the refinery opened in the1950s. The laboratory is the Facility's on-site lab used to maintain quality control over the refining process and to help monitor compliance with environmental regulations. It primarily handles petroleum products or related materials and water samples. The lab building has a concrete floor with drains that connect to SWMU 12 (Sewer System).

Currently the laboratory generally manages spent/unused hydrocarbon samples by placement in

segregated drums located inside the laboratory. The drum contents are picked up periodically by a vacuum truck in the refinery and sent to the refinery slop system. The wastewater samples are discharged to the sewer and through the API separator prior to discharge to the wastewater treatment plant. Discharges from the sinks in the laboratory are routed to the wastewater treatment plant via the sewer system. Chemicals or reagents that could adversely affect the wastewater treatment plant are managed separately. Past practices regarding disposal are unknown.

10.I.ii Evaluation of Investigation Results

No investigations have been conducted at this AOC.

10.I.iii Basis of Determination

During mediation NMED agreed to move AOC 30 to a Consent Order to give the Permittee time to gather additional information to demonstrate if the unit meets the definition of a SWMU or AOC. There was no available soil or groundwater data regarding the AOC. An AOC Assessment Report is due to NMED no later than June 30, 2020.

10.J AOC 31, Tanks 27 and 28

Tanks 27 and 28 are steel tanks with double bottoms, floating roof, and leak detection. The tanks have a capacity to hold 5,000 bbls (210,000 gallons) each and are used to store stormwater and process wastewater upstream of the API Separator as part of the wastewater treatment system. The tanks are located south of the Evaporation Ponds and west of the Crude Oil Tank Farm (Figure 2).

10.J.i History

Tanks 27 and 28 were originally installed as part of the Facility's stormwater management system, to prevent the API Separator from being overwhelmed by flows during precipitation events. However, the tanks use evolved to include use as surge tanks (along with Tank 35) for the Facility's wastewater treatment plant. This was also the location of the former 90-day RCRA storage area. Tank 35 overtopped twice in 2013 (Western, 2013a) which resulted in a release of unprocessed wastewater, the oily water was collected by vacuum truck and approximately 380 cubic yards of contaminated soils were removed. Confirmation samples were collected. In 2013 a series of frac tanks were placed near AOC 31 to hold wastewater when Tanks 27, 28, and 35 were at capacity while there were issues with the Facility's wastewater treatment system. Unprocessed wastewater was transferred back and forth by vacuum truck and process water was stored in the frac tanks for up to five months at a time (Western, 2013b). There were no recorded releases during this time; however, the potential for leaks and spills during transfer operations potentially affected the site.

10.J.ii Evaluation of Investigation Results

There have been no investigations at this AOC.

10.J.iii Basis of Determination

During mediation NMED agreed to move AOC 31 to a Consent Order to give the Permittee time to gather additional information to demonstrate if the unit meets the definition of a SWMU or AOC. There was no available soil or groundwater data regarding the AOC. An AOC Assessment Report is due to NMED no later than March 31, 2021.

10.K AOC 34, Scrap Yard

The Scrap Yard (AOC 34) is located northwest of the Tank Farm and to the west of the Fire Fighting Training Area (SWMU 7). See Figure 2.

10.K.i History

AOC 34 has been used to store old machinery, tanks, piping and valves, steel drums, paint cans, and other scrap. Old machinery may have leaked used oil or hydraulic fluid. Old tanks, pipes, and valves may have leaked residual petroleum liquids or sludges.

10.K.ii Evaluation of Investigation Results

There have been no investigation at this AOC.

10.K.iii Basis of Determination

During mediation NMED agreed to move AOC 34 to a Consent Order to give the Permittee time to gather additional information to demonstrate whether the unit meets the definition of a SWMU or AOC. There was no available soil or groundwater data regarding the AOC. An AOC Assessment Report is due to NMED no later than June 30, 2021.

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FIGURES

ATTACHMENT 1