ATTACHMENT A

ATTACHMENT A: GENERAL FACILITY DESCRIPTION

A.1 SITE LOCATION

The Gallup Refinery is a small crude oil refinery located in McKinley County, New Mexico approximately 17 miles east of Gallup, NM at Exit 39 off of Interstate 40 (I-40), Jamestown, New Mexico. The refinery is situated on an 810 acre tract of land. The surrounding land is comprised primarily of public lands and is used for cattle and sheep grazing. The nearest population centers include: refinery maintained residences for several employees approximately 0.5 mile south of the refinery process area; a truck stop located within one mile south-southwest of the process area at the I-40 exit; a rural residential area, Whispering Cedars, with a density of eight to 10 residents per square mile is located about 1.5 miles southwest of the refinery; Iyanbito, a small community, is located within three miles northwest of the refinery; Fort Wingate Military Reservation is within six miles west of the refinery. The largest residential community near the refinery is the city of Gallup, NM which is 17 miles west of the refinery.

A.2 GEOGRAPHY AND GEOLOGY

The local topography gradually inclines down-slope from high ground in the southeast of the Facility to a fluvial plain in the northwest. The highest point on refinery property is located at the southeast corner boundary with an elevation of approximately 7,040 feet and the lowest point is located at the northwest corner boundary with an elevation of approximately 6,860 feet. The refinery process area is located on a man-made terrace with an elevation of approximately 6,950 feet. Surface water include man-made evaporation ponds and aeration basins located on refinery property, a livestock water pond (Jon Myer's Pond) located east of the refinery, two small unnamed spring-fed ponds located south of the refinery, and the South Fork of the Puerco River and its tributary arroyos. The various ponds and basins consistently have water in them throughout the year. The South Fork of the Puerco River and its tributaries are intermittent and generally only contain water during and immediately after the occurrence of precipitation.

The refinery is located on a layered geologic formation which is part of the high desert plain on the western slope of the continental divide. Surface soils generally consist of fluvial and alluvial deposits, primarily silt and clay with inter-bedded sand layers. The stratigraphy is complex and highly variable due to the presence of sand stringers, cobble beds, and dense clay layers. Below the surface layer is the Chinle Group, which consists of primarily low permeability claystones and siltstones that comprise the channel and floodplain deposits of this formation. The Chinle Group acts as an aquiclude; the clays and shales have a hydraulic conductivity of 10^{-9}cm/sec. Just above the Chinle Group is a zone of water bearing, weathered alluvium called the Chinle slope wash which is hydraulically interconnected with water located in shallow, localized sand lenses located between the Chinle slope wash and the ground surface. The Chinle slope wash is continuous and saturated throughout the region underneath the LTU. However, the Chine slope wash does not meet the regulatory definition of the uppermost aquifer; the rate of water movement is estimated to be less than 1 foot per year. Inter-bedded with the Chinle Group is the Sonsela Sandstone bed, which represents the uppermost potential aquifer in the region. The Sonsela lies within and parallels the dip of the Chinle Group, its highest point is located southeast of the facility and it slopes downward to the northwest as it passes under the facility. The Sonsela acts as a water bearing reservoir and is artesian at its lower extremis. Artesian conditions exist through much of the central and western portions of the refinery property.

A.3 SITE BACKGROUND

The Facility was constructed in 1957 by El Paso Natural Gas Company near a railroad depot known locally as "Ciniza." The refinery was purchased and operated by Shell Oil Company until 1982 when it was purchased by Giant Industries Arizona, Incorporated which owned and operated the Facility until May 2007. Western Refining Southwest, Incorporated acquired Giant Industries and currently operates the Facility as Gallup Refinery.

The facility receives crude oil via two 6-inch diameter pipelines; the Bisti Pipeline comes from the Four Corners area and enters the refinery property from the north and the Hospah Pipeline comes in from the northeast and is an interconnection with a main interstate pipeline. The refinery also receives natural gas condensate feedstocks via a 4-inch diameter pipeline that comes in from the west along the I-40 corridor from the Conoco gas plant. Crude oil and other products also arrive at the site via railroad cars. These feedstocks are sorted into tanks until refined into final products which include propane, butane, naphtha, unleaded gasoline, diesel (low sulfur and ultra-low sulfur), and residual fuel.

The refinery has various processing units that convert crude oil and natural gasoline into finished products. These units include the crude distillation unit which separates crude oil into various fractions including gas, naphtha, light oil, and residuals. The fluidized catalytic cracking unit (FCCU) dissociates (or cracks) long-chain hydrocarbon molecules into smaller molecules and converts heavier oils into naphtha and lighter oils. The alkylation unit combines specific types of hydrocarbon molecules into a high octane gasoline blending component. The reforming unit breaks up and reforms low octane naphtha molecules to make high octane naphtha. The hydrotreating unit removes undesirable sulfur and nitrogen compounds from intermediate feedstocks and also saturates the feedstocks with hydrogen to make diesel fuel. Additional treater units also remove impurities from various intermediate and blending feedstocks in order to produce finished products that comply with sales specifications. The isomerization unit converts low octane hydrocarbon molecules into high octane molecules. A set of acid gas treating and sulfur recovery units convert and recover various sulfur compounds from other processing units and then produce either Ammonium Thiosulfate or a solid elemental sulfur byproduct.

In addition to the processing units various other equipment and systems support the operation of the refinery. Storage tanks are used throughout the refinery to hold and store crude oil, natural gasoline, intermediate feedstocks, finished products, chemicals, and water. These tanks are all above ground and range in size from 80,000 barrels to less than 1,000 barrels. Pumps, valves, and piping systems are used throughout the refinery to transfer various liquids among the storage tanks and processing units. A railroad spur track and railcar loading rack are used to transfer feedstocks and products from refinery storage tanks into and out of railcars. Several tank truck loading racks are used at the refinery to load out finished products and also may receive crude oil, other feedstocks, additives, and chemicals. A pipeline from the refinery carries diesel fuel to the Pilot truck stop (gasoline is delivered by truck). A firefighting training facility is used to conduct employee firefighting training; waste water from the facility, when training is conducted, is pumped into a tank which is them pumped out by vacuum truck which pumps the oily water into a process sewer leading to the New API Separator (NAPIS). The process wastewater system is a network of curbing, paving, catch basins, and underground piping that collects wastewater effluent from various processing areas within the refinery and then conveys

this wastewater to the NAPIS. The NAPIS is a two compartment oil water separator; skimmed slop oil is passed to a collection chamber where it is pumped back into the refinery process, stripped water flows to the aeration basins. Sludge that sinks to the bottom of the NAPIS is periodically vacuumed out and disposed of as hazardous waste at an approved landfill or recycled and reused at refineries that have this allowable exemption under RCRA. The aeration lagoons and evaporation ponds are the final part of the processing of waste water at the refinery. At the aeration a basins, treated waste water is mixed with air to oxidize any remaining organic constituents and increase the overall dissolved oxygen concentration available to microbial organisms which degrade any remaining hydrocarbons into carbon dioxide and water. Three 15-horsepower aerators provide aeration in the first lagoon and two aerators provide aeration in the second lagoon. Effluent from the second aeration lagoon flows to the first of several evaporation ponds where the wastewater is converted into vapor via solar and mechanical (wind) evaporation. No wastewater is discharged from the refinery to surface waters. The storm water system at the refinery is a network of valves, gates, berms, embankments, culverts, trenches, ditches, natural arroyos, and retention ponds that collect, convey, control, treat, and release storm water that falls within or passes through the refinery property. Storm water that falls with the process areas is considered equivalent to process waste water and is sent through the waste water treatment system.

A.4 RCRA PERMITTED LAND TREATMENT UNIT

The hazardous waste management unit at the Facility, the Land Treatment Unit (LTU), is located approximately 1500 feet northwest of the refinery process area and is undergoing post-closure care. The LTU lies outside the 100-yr floodplain boundary. The LTU consists of three 480 feet by 240 feet cells located immediately east of Evaporation Pond 12B. Each cell contains 2.6 acres (1.0 hectare) of available treatment surface. Each section is delineated by a continuous dike. The soil within the treatment zone is silty clay, soil with permeability from 6 to 12 inches averages 1.9×10^{-5}cm/sec (6.8×10^{-2}cm/hr). The treatment zone soils have a saturated hydraulic conductivity that is considered “moderately low.” The LTU consists of a treatment zone of soil extending 5 feet deep from the original surface. The Zone of Incorporation (ZOI) within the treatment zone is the volume of soil to which the waste was directly applied. The ZOI for the LTU is the top 12 inches of the treatment zone. The ZOI was tilled during operation to encourage microbial activity and improve chemical reaction rates. During active treatment soil nutrients were applied to optimize the carbon:nitrogen:phosphorous ratios.

The LTU received hazardous wastes from October 10, 1980 to November 8, 1990 and received non-hazardous waste between 1990 and 1993. No waste has been added to the LTU since 1993. Wastes that were placed in the LTU include potentially ignitable materials (D001), cooling water filter sludge (D007), slop oil emulsion sludge (K047), heat exchanger bundle cleaning sludge (K050), API Separator sludge (K051), and leaded tank bottoms (K052). Approximately 2600 tons of hazardous wastes were treated at the LTU. Waste management activities for the treatment program are based on a land treatment demonstration (Land Treatment Demonstration, 1988) conducted by the refinery in order to design operating treatment parameters. Design capacity and conditional limits of the LTU included a treatment zone thickness of not more than 5 feet from the original soil surface and a maximum treatment zone depth at least 3 feet above the seasonal high water table. A continuous berm surrounds the LTU at approximately 2 feet above the natural grade. The LTU is monitored by a schedule described in Permit Section III.E.

40 CFR 265, Subpart F requires the monitoring of the uppermost aquifer beneath the unit for possible effects on groundwater. The Facility installed a network of monitoring wells, one up-gradient and three down-gradient wells to monitor the LTU. MW-4 is the up-gradient well and is installed in the Sonsela aquifer. Down-gradient wells include MW-1, 2, and 3. MW-3 was abandoned and replaced by MW-5. The wells are monitored according to the schedule in the Facility-wide Groundwater Monitoring Plan (Permit Section IV.C.2). Shallow monitoring wells were also installed as early detection monitoring points. At least four thin sand lenses exist above the Chinle shale, between the ground surface and the top of the Sonsela sandstone; the first two lenses encountered are dry. SMW-1, 2, and 3 (up-gradient wells) are completed in the third lens. SMW-4 and SMW-5 (down-gradient wells) are completed in the fourth sand lens, which is saturated and perched immediately above the Chinle shale. Currently the unsaturated zone detection monitoring system consists of SMW-3, SMW-4, SMW-5, and SMW-6 and the detection monitoring system consists of MW-1, MW-2, MW-4, and MW-5.

ATTACHMENT B

OMB# 2050-0024; Expires 11/30/2011

SEND COMPLETED FORM TO: The Appropriate State or Regional Office.

United States Environmental Protection Agency
RCRA SUBTITLE C SITE IDENTIFICATION FORM

1. Reason for Submittal

MARK ALL BOX(ES) THAT APPLY

Reason for Submittal:

- ☐ To provide an Initial Notification (first time submitting site identification information / to obtain an EPA ID number for this location)
- ☒ To provide a Subsequent Notification (to update site identification information for this location)
- ☐ As a component of a First RCRA Hazardous Waste Part A Permit Application
- ☐ As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment #_____)
- ☐ As a component of the Hazardous Waste Report (If marked, see sub-bullet below)
  - ☐ Site was a TSD facility and/or generator of ≥1,000 kg of hazardous waste, >1 kg of acute hazardous waste, or >100 kg of acute hazardous waste spill cleanup in one or more months of the report year (or State equivalent LQG regulations)

2. Site EPA ID Number

EPA ID Number N M D 0 0 0 3 3 3 2 1 1

3. Site Name

Name: Western Refining Southwest, Inc., Gallup Refinery

4. Site Location Information

Street Address: I-40 Exit 39, 17 Miles East of Gallup

City, Town, or Village: Jamestown | **County:** McKinley

State: New Mexico | **Country:** USA | **Zip Code:** 87347

5. Site Land Type

☒ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

6. NAICS Code(s) for the Site (at least 5-digit codes)

A.	3 2 4 4 1 0	C.	
B.		D.	

7. Site Mailing Address

Street or P.O. Box: Route 3 Box 7

City, Town, or Village: Gallup

State: New Mexico | **Country:** USA | **Zip Code:** 87301

8. Site Contact Person

First Name: Ed | **MI:** | **Last:** Riege

Title: Environmental Manager

Street or P.O. Box: Route 3 Box 7

City, Town or Village: Gallup

State: New Mexico | **Country:** USA | **Zip Code:** 87301

Email: ed.riege@wnr.com

Phone: 505-722-0217 | **Ext.:** | **Fax:** 505-722-0210

9. Legal Owner and Operator of the Site

A. Name of Site's Legal Owner: Western Refining Company, LP | **Date Became Owner:** 11/15/2007

Owner Type: ☒ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

Street or P.O. Box: 6500 Trowbridge Drive

City, Town, or Village: El Paso | **Phone:** 915-534-1400

State: Texas | **Country:** USA | **Zip Code:** 79905

B. Name of Site's Operator: Western Refining Southwest, Inc. | **Date Became Operator:** 11/15/2007

Operator Type: ☒ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

EPA ID Number N M D 0 0 0 3 3 3 2 1 1

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10. Type of Regulated Waste Activity (at your site)
Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities; Complete all parts 1-7.

Y ☒ N ☐ **1. Generator of Hazardous Waste**
If "Yes", mark only one of the following – a, b, or c.

- ☒ a. LQG: Generates, in any calendar month, 1,000 kg/mo (2,200 lbs./mo.) or more of hazardous waste; **or** Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lbs./mo) of acute hazardous waste; **or** Generates, in any calendar month, **or** accumulates at any time, more than 100 kg/mo (220 lbs./mo) of acute hazardous spill cleanup material.
- ☐ b. SQG: 100 to 1,000 kg/mo (220 – 2,200 lbs./mo) of non-acute hazardous waste.
- ☐ c. CESQG: Less than 100 kg/mo (220 lbs./mo) of non-acute hazardous waste.

If "Yes" above, indicate other generator activities.

Y ☒ N ☐ d. Short-Term Generator (generate from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section.

Y ☐ N ☒ e. United States Importer of Hazardous Waste

Y ☐ N ☒ f. Mixed Waste (hazardous and radioactive) Generator

Y ☐ N ☒ **2. Transporter of Hazardous Waste**
If "Yes", mark all that apply.
- ☐ a. Transporter
- ☐ b. Transfer Facility (at your site)

Y ☐ N ☒ **3. Treater, Storer, or Disposer of Hazardous Waste** Note: A hazardous waste permit is required for these activities.

Y ☐ N ☒ **4. Recycler of Hazardous Waste**

Y ☐ N ☒ **5. Exempt Boiler and/or Industrial Furnace**
If "Yes", mark all that apply.
- ☐ a. Small Quantity On-site Burner Exemption
- ☐ b. Smelting, Melting, and Refining Furnace Exemption

Y ☐ N ☒ **6. Underground Injection Control**

Y ☐ N ☒ **7. Receives Hazardous Waste from Off-site**

B. Universal Waste Activities; Complete all parts 1-2.

Y ☐ N ☒ **1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste managed at your site. If "Yes", mark all that apply.**

- a. Batteries ☐
- b. Pesticides ☐
- c. Mercury containing equipment ☐
- d. Lamps ☐
- e. Other (specify) _____ ☐
- f. Other (specify) _____ ☐
- g. Other (specify) _____ ☐

Y ☐ N ☒ **2. Destination Facility for Universal Waste**
Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities; Complete all parts 1-4.

Y ☐ N ☒ **1. Used Oil Transporter**
If "Yes", mark all that apply.
- ☐ a. Transporter
- ☐ b. Transfer Facility (at your site)

Y ☐ N ☒ **2. Used Oil Processor and/or Re-refiner**
If "Yes", mark all that apply.
- ☐ a. Processor
- ☐ b. Re-refiner

Y ☐ N ☒ **3. Off-Specification Used Oil Burner**

Y ☐ N ☐ **4. Used Oil Fuel Marketer**
If "Yes", mark all that apply.
- ☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
- ☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

EPA ID Number N M D 0 0 0 3 3 3 2 1 1

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D. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262 Subpart K

- You must check with your State to determine if you are eligible to manage laboratory hazardous wastes pursuant to 40 CFR Part 262 Subpart K

☐ 1. Opting into or currently operating under 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories **See the item-by-item instructions for definitions of types of eligible academic entities. Mark all that apply:**

☐ a. College or University

☐ b. Teaching Hospital that is owned by or has a formal written affiliation agreement with a college or university

☐ c. Non-profit Institute that is owned by or has a formal written affiliation agreement with a college or university

☐ 2. Withdrawing from 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories

11. Description of Hazardous Waste

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

D001	K049	K050	K051			

B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes. Please list the waste codes of the State-Regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

EPA ID Number N M D 0 0 0 3 3 3 2 1 1

OMB#: 2050-0024; Expires 11/30/2011

12. Notification of Hazardous Secondary Material (HSM) Activity

Y ☐ N ☒ Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 261.2(a)(2)(ii), 40 CFR 261.4(a)(23), (24), or (25)?

If "Yes", you must fill out the Addendum to the Site Identification Form: Notification for Managing Hazardous Secondary Material.

13. Comments

~~Part A application applies only to the Post Closure of the Land Treatment Unit at the Western Refining, Gallup Refinery.~~

~~No Hazardous waste has been applied to the land treatment unit from 1990 to present February 2010.~~

14. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with 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 fines and imprisonment for knowing violations. For the RCRA Hazardous Waste Part A Permit Application, all owner(s) and operator(s) must sign (see 40 CFR 270.10(b) and 270.11).

Signature of legal owner, operator, or an authorized representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)
Mark B. Turri	Mark B. Turri	2/23/2010

United States Environmental Protection Agency

HARDOUS WASTE PERMIT INFORMATION FORM

1. Facility Permit Contact	**First Name:** Ed	**MI:**	**Last Name:** Riege
	Contact Title: Environmental Manager		
	Phone: 505-722-0217	**Ext.:**	**Email:** ed.riege@wnr.com
2. Facility Permit Contact Mailing Address	**Street or P.O. Box:** Route 3 Box 7		
	City, Town, or Village: Gallup		
	State: New Mexico		
	Country: USA	**Zip Code:** 87301	
3. Operator Mailing Address and Telephone Number	**Street or P.O. Box:** Route 3 Box 7		
	City, Town, or Village: Gallup		
	State: New Mexico	**Phone:**	
	Country: USA	**Zip Code:** 87301	
4. Facility Existence Date	**Facility Existence Date (mm/dd/yyyy):** 11/15/2007		

5. Other Environmental Permits

A. Facility Type (Enter code)	B. Permit Number													C. Description
R	N	M	D		0	0	0	3	3	3	2	1	1	Hazardous Waste Facility Permit
E	0	6	3	3		M	7							NSR Air Quality Permit - NMED
E	G	W		0	3	2								Discharge Permit - NMOCD
E	P	O		2	1		R	1						Air Quality Operating Permit - NMED
N	N	M	R		0	5		B		1	5	7		NPDES Stormwater Multi-Sector

6. Nature of Business:

Refines crude oil and markets refined petroleum fuel products.

7. Process Codes and Design Capacities – Enter information in the Section on Form Page 3

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in Item 8.

B. PROCESS DESIGN CAPACITY – For each code entered in Item 7.A; enter the capacity of the process.

1. **AMOUNT – Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.**
2. **UNIT OF MEASURE – For each amount entered in Item 7.B(1), enter the code in Item 7.B(2) from the list of unit of measure codes below that describes the unit of measure used. Select only from the units of measure in this list.**

C. PROCESS TOTAL NUMBER OF UNITS – Enter the total number of units for each corresponding process code.

Process Code	Process	Appropriate Unit of Measure for Process Design Capacity
	Disposal	
D79	Underground Injection Well Disposal	Gallons; Liters; Gallons Per Day; or Liters Per Day
D80	Landfill	Acre-feet; Hectares-meter; Acres; Cubic Meters; Hectares; Cubic Yards
D81	Land Treatment	Acres or Hectares
D82	Ocean Disposal	Gallons Per Day or Liters Per Day
D83	Surface Impoundment Disposal	Gallons; Liters; Cubic Meters; or Cubic Yards
D99	Other Disposal	Any Unit of Measure Listed Below
	Storage	
S01	Container	Gallons; Liters; Cubic Meters; or Cubic Yards
S02	Tank Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S03	Waste Pile	Cubic Yards or Cubic Meters
S04	Surface Impoundment	Gallons; Liters; Cubic Meters; or Cubic Yards
S05	Drip Pad	Gallons; Liters; Cubic Meters; Hectares; or Cubic Yards
S06	Containment Building Storage	Cubic Yards or Cubic Meters
S99	Other Storage	Any Unit of Measure Listed Below
	Treatment	
T01	Tank Treatment	Gallons Per Day; Liters Per Day
T02	Surface Impoundment	Gallons Per Day; Liters Per Day
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; BTUs Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Gallons Per Day; Metric Tons Per Hour; or Million BTU Per Hour
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Short Tons Per Day; BTUs Per Hour; Gallons Per Day; Liters Per Hour; or Million BTU Per Hour
T80	Boiler	Gallons; Liters; Gallons Per Hour; Liters Per Hour; BTUs Per Hour; or Million BTU Per Hour

Process Code	Process	Appropriate Unit of Measure for Process Design Capacity
	Treatment (Continued)	**(for T81 – T94)**
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; BTU Per Hour; Liters Per Hour; Kilograms Per Hour; or Million BTU Per Hour
T82	Lime Kiln	
T83	Aggregate Kiln	
T84	Phosphate Kiln	
T85	Coke Oven	
T86	Blast Furnace	
T87	Smelting, Melting, or Refining Furnace	
T88	Titanium Dioxide Chloride Oxidation Reactor	
T89	Methane Reforming Furnace	
T90	Pulping Liquor Recovery Furnace	
T91	Combustion Device Used in the Recovery of Sulfur Values from Spent Sulfuric Acid	
T92	Halogen Acid Furnaces	
T93	Other Industrial Furnaces Listed in 40 CFR 260.10	
T94	Containment Building Treatment	Cubic Yards; Cubic Meters; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; BTU Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million BTU Per Hour
	Miscellaneous (Subpart X)	
X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below
X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; Kilograms Per Hour; Gallons Per Hour; Liters Per Hour; or Gallons Per Day
X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; BTU Per Hour; or Million BTU Per Hour
X04	Geologic Repository	Cubic Yards; Cubic Meters; Acre-feet; Hectare-meter; Gallons; or Liters
X99	Other Subpart X	Any Unit of Measure Listed Below

Unit of Measure	Unit of Measure Code
Gallons	**G**
Gallons Per Hour	**E**
Gallons Per Day	**U**
Liters	**L**
Liters Per Hour	**H**
Liters Per Day	**V**

Unit of Measure	Unit of Measure Code
Short Tons Per Hour	**D**
Short Tons Per Day	**N**
Metric Tons Per Hour	**W**
Metric Tons Per Day	**S**
Pounds Per Hour	**J**
Kilograms Per Hour	**X**
Million BTU Per Hour	**X**

Unit of Measure	Unit of Measure Code
Cubic Yards	**Y**
Cubic Meters	**C**
Acres	**B**
Acre-feet	**A**
Hectares	**Q**
Hectare-meter	**F**
BTU Per Hour	**I**

EPA ID Number | N | M | D | 0 | 0 | 0 | 3 | 3 | 3 | 2 | 1 | 1 |

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7. Process Codes and Design Capacities (Continued)

EXAMPLE FOR COMPLETING Item 7 (shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.

Line Number		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY (1) Amount (Specify)	(2) Unit of Measure	C. Process Total Number of Units	For Official Use Only					
X	1	S	0	2	533.788	G	001						
	1	D	8	1	15.0	B	001						
	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
1	0												
1	1												
1	2												
1	3												

Note: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the line sequentially, taking into account any lines that will be used for "other" process (i.e., D99, S99, T04, and X99) in Item 8.

8. Other Processes (Follow instructions from Item 7 for D99, S99, T04, and X99 process codes)

Line Number (Enter #s in sequence with Item 7)		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY (1) Amount (Specify)	(2) Unit of Measure	C. Process Total Number of Units	For Official Use Only					
X	2	T	0	4	100.00	U	001						

EPA ID Number | N | M | D | 0 | 0 | 0 | 3 | 3 | 3 | 2 | 1 | 1 |

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9. Description of Hazardous Wastes - Enter Information in the Sections on Form Page 5

A. EPA HAZARDOUS WASTE NUMBER – Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR Part 261, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY – For each listed waste entered in Item 9.A, estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in Item 9.A, estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE – For each quantity entered in Item 9.B, enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure, taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in Item 9.A, select the code(s) from the list of process codes contained in Items 7.A and 8.A on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all listed hazardous wastes.

For non-listed waste: For each characteristic or toxic contaminant entered in Item 9.A, select the code(s) from the list of process codes contained in Items 7.A and 8.A on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. **Enter the first two as described above.**
2. **Enter "000" in the extreme right box of Item 9.D(1).**
3. **Use additional sheet, enter line number from previous sheet, and enter additional code(s) in Item 9.E.**

2. PROCESS DESCRIPTION: If code is not listed for a process that will be used, describe the process in Item 9.D(2) or in Item 9.E(2).

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER – Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. **Select one of the EPA Hazardous Waste Numbers and enter it in Item 9.A. On the same line complete Items 9.B, 9.C, and 9.D by estimating the total annual quantity of the waste and describing all the processes to be used to store, treat, and/or dispose of the waste.**
2. **In Item 9.A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In Item 9.D.2 on that line enter "included with above" and make no other entries on that line.**
3. **Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.**

EXAMPLE FOR COMPLETING Item 9 (shown in line numbers X-1, X-2, X-3, and X-4 below) – A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operations. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number		A. EPA Hazardous Waste No. (Enter code)				B. Estimated Annual Qty of Waste	C. Unit of Measure (Enter code)	D. PROCESSES									
								(1) PROCESS CODES (Enter Code)									(2) PROCESS DESCRIPTION (If code is not entered in 9.D(1))
X	1	K	0	5	4	900	P	T	0	3	D	8	0				
X	2	D	0	0	2	400	P	T	0	3	D	8	0				
X	3	D	0	0	1	100	P	T	0	3	D	8	0				
X	4	D	0	0	2												Included With Above

EPA ID Number N M D 0 0 0 3 3 3 2 1 1

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9. Description of Hazardous Wastes ***(Continued. Use additional sheet(s) as necessary; number pages as 5a, etc.)***

Line Number		A. EPA Hazardous Waste No. (Enter code)				B. Estimated Annual Qty of Waste	C. Unit of Measure (Enter code)	D. PROCESSES									
								(1) PROCESS CODES (Enter Code)									(2) PROCESS DESCRIPTION (If code is not entered in 9.D(1))
	1	D	0	0	1	45.0	T	D	8	1							
	2	K	0	4	9	228.0	T	D	8	1							
	3	K	0	5	0	6.0	T	D	8	.1							
	4	K	0	5	1	2325.0	T	D	8	1							
	5																
	6																
	7																
	8																
	9																
1	0																
1	1																
1	2																
1	3																
1	4																
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1	6																
1	7																
1	8																
1	9																
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2	7																
2	8																
2	9																
3	0																
3	1																
3	2																
3	3																
3	4																
3	5																
3	6																

EPA ID Number | N | M | D | 0 | 0 | 0 | 3 | 3 | 3 | 2 | 1 | 1 |

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10. Map

Attach to this application a topographical map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all spring, rivers, and other surface water bodies in this map area. See instructions for precise requirements.

11. Facility Drawing

All existing facilities must include a scale drawing of the facility (see instructions for more detail).

12. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, and disposal areas; and sites of future storage, treatment, or disposal areas (see instructions for more detail).

13. Comments

Part A Permit Application applies only to the Post-Closure of the land treatment unit at the Western Refining - Gallup Refinery.

The volumes of waste entered in Section 9 are the total volumes applied to the land treatment unit from 1987 to 1990. No hazardous waste has been applied to the land treatment from 1990 to present, 2/2010.

ATTACHMENT C

ATTACHMENT C: INSPECTION PLAN

The Facility Environmental Manager (EM) shall assign and train personnel to inspect the LTU on a regular schedule to identify problems or potential problems and correct them before they cause harm to human health or the environment. Table C-1 summarizes the inspection schedule and frequencies and identifies components inspected and potential problems. Table C-2 is an example of an inspection form. Inspection frequencies may be increased at the discretion of the Facility EM with input from NMED.

C.1 WEEKLY INSPECTIONS

Each week and following every major precipitation event, the inspector shall inspect the LTU for water accumulation, odors, soil condition, wind erosion, dike condition, and warning sign condition. The inspector also inspects the LTU monitoring equipment, gates, and fences. The inspector shall record the inspection date, name of person inspecting the LTU, observations, and date and nature of repairs or remedial action taken on the checklist (Table C-2). No record is kept of these inspections unless repairs are required. The inspector shall issue a work order request for any needed repairs. Work order requests are tracked by the Scheduling and Maintenance Department and then submitted to the Facility EM for signature when work is completed.

The dikes shall be inspected to ensure that integrity is maintained to effectively control storm water runoff and run on. The dikes shall be maintained at the minimum height of two feet above the surface of the LTU and with 2:1 side slopes to ensure that each dike has sufficient capacity to control runoff during the post closure care period. If the integrity of the dikes is compromised, the Facility EM shall ensure that corrective action is taken promptly. The Facility EM shall maintain inspection checklists and work orders for all LTU inspections. All inspection records and work orders shall be maintained for at least three years following the date of inspection or latest remedial action as a result of an inspection.

C.2 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT

The design and operation of the LTU meets the requirements to prevent runoff from the LTU, prevent contamination of water supplies, mitigate the effects of equipment and power failure, prevent undue exposure of personnel to hazardous waste, and prevent releases to the atmosphere; however, the Permittee shall apply the procedures, structures and equipment used to prevent hazards at the LTU described below during the post closure period.

C.2.a Unloading Operations

The Facility shall not apply hazardous wastes to the LTU during the post closure care period. No unloading operations shall be performed at the LTU; thus, no hazardous waste spills can occur.

C.2.b Runoff Prevention

The LTU does not lie within a 100 year floodplain. No major surface water bodies are within ten miles of the site, and the nearest river, the normally dry Puerco River, is approximately one mile

north. Protection from flooding or ponding caused by probable maximum precipitation events is provided by diverting water away from the LTU by a system of dikes, berms and swales. Additionally, grade elevations of roads are designed so that storm water shall not collect on the site under the most severe conditions. Flood control structures, such as dikes and berms are inspected regularly. During LTU inspections, the structures are checked to ensure that no wind or rain erosion or animal caused damage has caused the system to fail. Further, the areas around the LTU are also inspected to ensure that they are free of vegetation, debris, or other items that would impede the water diversion. Experience with the LTU during the operational phase has shown that weekly structural inspections are adequate for the climate and soil conditions at the Facility. However, inspections are also conducted after significant storm events.

C.2.c Water Supplies

Application of hazardous waste to the LTU ceased in 1990. Because the hazardous waste applied to the LTU during permitted operations has been degraded or immobilized, the risk to groundwater and/or water supplies is minimal. The geological, hydrological, and climatological features of the LTU, along with the procedures, structures, and equipment used during the operation phase activities ensure that hazardous waste shall not come in contact with the groundwater. It is unlikely that any contaminated groundwater can migrate from the treatment zone of the LTU to the accessible environment, including water supplies, during the post closure care period. Gallup Refinery shall monitor the Sonsela aquifer during the post closure care period, as described in Permit Section III.E and Attachment D, the Post Closure Monitoring Plan, to further protect this water body.

C.2.d Equipment Failure

LTU activities shall be limited to applying fertilizer as necessary, and sampling as detailed in Attachment D, Post Closure Monitoring. If equipment fails, it shall be repaired or replaced before continuing operations requiring the failed equipment.

C.2.e Personal Protective Equipment

Gallup Refinery personnel responsible for LTU activities shall use personal protective equipment (PPE) to protect themselves from the hazards in the work place under normal conditions. PPE and emergency equipment shall also be used under unusual hazardous conditions. During post closure care, PPE required for personnel involved with LTU activities may include protective overalls, safety toe/steel toe shoes, and protective shoe coverings, depending on the activities being conducted. Emergency equipment shall be maintained at Gallup Refinery so that personnel and emergency response personnel can protect themselves and respond appropriately to an incident at the LTU. PPE and emergency equipment supplies are stored in the refinery warehouse. All personnel who may be required to use PPE and emergency equipment to respond to a LTU incident are trained to use this equipment.

C.2.f Releases to Atmosphere

Because the ZOI depth is 12 inches and a vegetative cover was be applied during closure activities, releases of hazardous constituents to the atmosphere are unlikely occur.

TABLE C-1
Inspection Schedule

Area	Specific Items	Type of Problem	Frequency
LTU	General Conditions	Water accumulation	Weekly
		Odors	After each major storm event
		Soil Coloration Changes	
		Wind Erosion/Dispersion	
		Site level, needs plowing	
	Dikes/Berms	Erosion	Weekly
		Evidence of run on	After each major storm event
	Signs	Condition and legibility	Weekly
	Water Wells	Caps in place	Weekly
		Damage to surface casing	
		Protection barriers in place	
Security	Fence	Gate properly locked	In operation continually – failures immediately reported
Communication Systems	Telephone/Radio	Audibility	In operation continually – failures immediately reported
	Fire whistle	Audibility	Monthly whistle check
	Emergency generator	Ease of start	Monthly by Boiler Operator and Safety Department
		Lubrication	
		Power Generation	

TABLE C-2
Land Treatment Unit Inspection Checklist

LTU Surface			
Condition:	Standing Water?	Yes	No
	Wet or Dry?	Yes	No
	Odor?	Yes	No
	Erosion?	Yes	No
	Is vegetation growing?	Yes	No
Monitoring Wells			
Condition:			
Caps and Locks			
Dikes/Berms			
Condition:	Standing Water?	Yes	No
	Wet or Dry?		
Vehicle, Fence, and Locks			
Condition:			
Signs (8)			
Condition:	In place?	Yes	No
	Legible?	Yes	No
Repairs Needed	Yes	No	
Time of Day:	AM	PM	Date:
Name of Inspector	_____		
Repairs Completed	Yes	No	
Signature	_____		Date:

ATTACHMENT D

ATTACHMENT D: POST-CLOSURE CARE PLAN

D.1 Introduction

The Permittee shall follow the post-closure care requirements in Permit Part III (Post-Closure Care of the Land Treatment Unit) and this attachment. The post-closure care plan consists of two monitoring sequences: detection monitoring in the treatment zone and detection monitoring in groundwater at the point of compliance (the aquifer) over the course of the post-closure care period. Maintenance activities for the LTU include maintenance of the vegetative cover, control of run-on and run-off, upkeep of signage, upkeep of fencing, and control of wind dispersal (dust suppression).

D.2 SOIL AND GROUNDWATER BACKGROUND

Background soil samples were collected in 1981 from the LTU, prior to any waste application. Additionally, no hazardous waste has been applied to Cell 3 of the LTU, which has been routinely sampled. Data from the 1981 sampling event and from Cell 3 have been used historically as the background data set. Metals concentration in samples obtained from Cell 3 are used as the background concentrations for determining statistically significant increases in hazardous constituents.

Beneath the LTU, a perched water-bearing unit called the Chinle slope wash lies on top of, but is not part of, the Chinle formation. This water bearing unit does not meet the regulatory definition of an aquifer that must be monitored as part of early detection monitoring; however, the Facility samples water from the Chinle slope wash as part of the groundwater monitoring program. Background samples for the Chinle slope wash have not been established. Metals concentrations detected in samples obtained from groundwater monitoring well MW-4 (up-gradient well) are used as background concentrations for groundwater monitoring of the Sonsela aquifer and used to determine any statistically significant increases in hazardous constituents. Detections of any constituents from the Modified Skinner List or detection of mercury or cyanide may generate additional requirements for sampling.

D.2.a Statistically Significant Results

If sampling results from any sampling event indicate a statistically significant increase in hazardous constituents as defined by 40 CFR 264.278(f) and §264.97(h), then sampling frequency may be modified after consultation with the NMED. If a statistically significant increase is indicated and verified, the Permittee shall submit notification to NMED as required by 40 CFR 264.278(g) and a permit modification of the sampling schedule may be required to further characterize the release.

D.3 DETECTION MONITORING

Unsaturated zone monitoring is intended to determine whether migration of hazardous constituents from the treatment zone has occurred. The number and depth of samples have been selected to adequately detect potential migration of hazardous constituents and also to evaluate the successful treatment, degradation, transformation, and immobilization of constituents in the

treatment zone. The unsaturated zone monitoring includes sampling soil in the zone of infiltration (ZOI), the treatment zone, and groundwater in the Chinle slope wash. Analytical parameters include the constituents on the modified Skinner List, total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO). The modified Skinner List is a subset of 40 CFR 261 Appendix VIII constituents and identifies the specific hazardous constituents of concern that are typically found in refinery waste. SMW-4 is used to monitor the Chinle slope wash.

Detection monitoring for groundwater is composed of the monitoring of the Sonsela aquifer and the detection monitoring system consists of MW-1, MW-2, MW-4, and MW-5 and shallow monitoring wells SMW-3, SMW-5, and SMW-6. MW-4 is located up-gradient of the LTU to provide background values. The uppermost aquifer beneath the LTU is the Sonsela, which is a confined aquifer that generally flows to the north/northeast under the LTU. The number and depth of samples and analytical methods have been selected to effectively monitor conditions. Detection monitoring will yield samples that represent the quality of groundwater hydraulically up-gradient groundwater in the Sonsela aquifer that would not be affected by LTU operations and samples that represent the quality of down-gradient groundwater passing the point of compliance. The point of compliance is a vertical subsurface located at the hydraulically down-gradient limit of waste management unit that extends down into the uppermost aquifer underlying the unit.

D.3.a Sampling Schedule

The sampling schedule for the ZOI and the treatment zone provides a sampling frequency based on maximum protection of human health and the environment while minimizing disruption of the LTU and underlying sediments. ZOI (the upper 12 inches of the treatment zone) sampling will confirm treatment of hazardous constituents. During post-closure care, the ZOI shall be sampled three times with minimum disruption of the vegetative cover. Characterization of the ZOI was conducted during a sampling event in 1999. Event 1 (9th year of post-closure care) sampling was conducted in 2009. Event 2 (19th year of post-closure care) and Event 3 (30th year of post-closure care) will be conducted in 2018 and 2029, respectively. The schedule assumes the early sampling events demonstrate that there is no statistically significant increase for any analytes in the ZOI. Initial treatment zone sampling was conducted in 1999 and the sampling frequency parallels the ZOI sampling with the same sampling parameters.

The Chinle Slope wash is sampled using SMW-4. Background values for the Chinle Slope wash are not established and detection of any constituents above regulatory limits may generate additional sampling requirements. The Chinle Slope wash was sampled annually for three years, after three years the wash has been sampled biannually including sampling during Event 1 in 2009. SMW-4 will be sampled during 19 and 30 year post-closure sampling events and in accordance with the *Facility-Wide Groundwater Monitoring Work Plan*, which is updated annually as required by Permit Section IV.C.2.

D.4 GROUNDWATER AND SOIL SAMPLING

Gallup Refinery shall notify the NMED a minimum of 15 days prior to a monitoring event. The Permittee must following proper sample collection and sample handling procedures as outlined in Permit Section IV.J.2 (Investigation, Sampling and Analysis Methods) when implementing

post-closure soil and groundwater sampling. Samples submitted for laboratory testing must be documented on a chain of custody form; all samples must have sample numbers and must be properly labeled.

Cells 1 and 2 of the LTU shall be divided into 6 foot by 6 foot grids (establishing the coordinate at the southeast corner of the LTU) and a random integer generator shall be used to select a minimum of two samples within each LTU cell. ZOI samples shall be collected from approximately one foot (12 inches) beneath the topsoil-ZOI surface. The treatment zone samples shall be taken from the bottom of the treatment zone (approximately five feet below the ground surface). For each monitoring event a total of two samples shall be taken from each boring, one from the ZOI and one from the treatment zone for a total of 12 LTU samples per event. This total does not include QC samples. Samples must not be composited for analysis. Samples will be analyzed for Modified Skinner List analysis and TPH (as GRO and DRO).

Boreholes for sampling shall be advanced using hollow-stem auger drill rig or other method approved in advance by NMED. All equipment and operation changes must be approved by the NMED. A split core barrel sampler shall be used to collect relatively undisturbed soil samples. The samples must be transferred directly to the sample container to maintain the integrity of the sample and prevent the loss of VOCs, if present. The Permittee must follow the requirements of Permit Section IV.J.2 for proper sample collection procedures. Soil screening guidelines are described in Permit Section IV.D (Cleanup Levels). Lithologic logging requirements are outlined in Permit Section IV.J.2.v.d (Logging of Soil Samples). All drill cuttings generated by borehole advancement for soil samples shall be spread within the LTU with little to no disruption of the vegetative cover. All borings shall be backfilled with hydrated bentonite to prevent migration from the treatment zone. Any changes to the sampling procedures must be reviewed by the NMED before sampling is conducted.

Groundwater samples are collected following the procedures outlined in Section IV.J.2.g (Groundwater Monitoring) of the Permit. One sample shall be collected from each monitoring well per sampling event for a total of four groundwater samples, not including the required QC samples.

All samples shall be documented and handled per Section IV.J.2.i (Documentation of Field Activities) in the Permit.

D.5 INSPECTIONS

Inspections shall be conducted as discussed in Permit Section III.C. The LTU is in an isolated area and access is restricted to personnel involved with monitoring and maintenance activities. A Safe Work permit is also required to before entry into the LTU. Inspections of the LTU during post-closure care ensure the detection of structural defects that may occur. Inspections of the LTU shall be conducted each week and after every major precipitation event. The inspector shall inspect the LTU for water accumulation, odors, soil condition, wind erosion, dike conditions, warning sign condition, LTU monitoring equipment, gates, and fences. Dikes shall be inspected to ensure that integrity is maintained to effectively control storm water runoff and run on. The dikes shall be maintained at the minimum height of two feet above the surface of the LTU with a 2:1 sideslope. A record of the inspections, including the date of the inspection and the need for repairs or maintenance must be maintained in the Facility Operating Record. If

repairs are required, then the inspector issues a work order request for needed repairs. The Permittee shall maintain inspection checklists and work orders for all LTU inspections for at least three years.

D.6 RESPONSIBILITIES

All individuals involved in the monitoring program must understand the responsibilities involved in the maintenance and monitoring of the LTU.

D.6.a Environmental Manager (EM)

The EM is responsible for the overall design and implementation of the post-closure care monitoring plan. The EM approves procedures for the conduct of all post-closure monitoring plan activities and reviews and approves reports. The EM oversees interactions between the Gallup Refinery and the NMED regarding environmental monitoring of the LTU. The EM appoints a post-closure monitoring plan team leader and field team, assigning responsibilities as detailed below.

D.6.b Team Leader

The team leader will coordinate and oversee inspections and field sampling activities, ensuring that sampling and associated procedures are followed and that QA/QC and safety guidelines are met. The team leader reviews and evaluates sample data, prepares and reviews LTU inspection logs and reports, and assures that the appropriate samples are collected and analyzed.

D.6.c Field Team

The LTU field team consists of one or more scientists, engineers, or technicians who are responsible for the inspections, sample collection, handling, shipping, and preparation and maintenance of appropriate data sheets, and completion of sample chain of custody forms under the direction of the team leader in accordance with the post-closure care monitoring plan and Facility field procedures. The field team will inspect, maintain, and ensure proper calibration of equipment prior to use at the LTU and ensure site health and safety requirements are met. The field team must communicate with the EM regarding field problems and any changes to methods and procedures.

D.6.d Analytical Laboratory

The contract laboratory used for sample analysis is responsible for supplying sample collection containers and shipping containers to the field team. The laboratory is responsible for performing analysis in accordance with the post-closure monitoring plan, EPA CLP analytical procedures and the data are supported by adequate documentation that meets the NMED's and EPA's requirements and in accordance with Permit Section IV.J.2.n (Documentation of Field Activities) and Section IV.J.3 (Chemical Analysis).

D.7 QUALITY ASSURANCE/QUALITY CONTROL

The Quality Assurance/Quality Control (QA/QC) program must be implemented in accordance with Permit Section IV.J.3.a.iii. Samples shall be analyzed by a commercial laboratory that participates in the EPA's Contract Laboratory Program. Methods are selected to be consistent

with the EPA recommended procedures in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (EPA 1997 and as updated) (SW-846). Data analysis shall provide an objective and reliable means for interpreting data in relation to the objectives of the data collection program. The principal goal of data analysis is the comparison of a data point or data set to a fixed standard or to equivalent data collected at another location and time (such as background data or data collected at a control location).

D.7.a Statistical Evaluation of Laboratory Data

Data shall be analyzed using Cochran's approximation to the Behrens-Fisher Student's T-test. This test shall be used to evaluate soil and groundwater monitoring data for statistically significant differences during the post-closure period. Cochran's approximation to the Behrens-Fisher Student's T-test is:

$t^* = (X_a - X_b) / ((S^2_m/N_m)+(S^2_b/N_b))^{1/2}$

Where: t^* = t star

X_a = mean of the sample

X_b = mean of the background

S^2_m = variance of the sample

S^2_b = variance of the background

N_m = number of samples

N_b = number of background samples

$t_c = (W_b t_b + W_m t_m) / (w_b + w)$

Where: t_c = comparison t star

W_b = variance / number of background samples

t_b = t-table with (N_b-1) degrees of freedom from the 0.05 level of significance

W_m = variance/number of samples

t_m = t-table with (N_m-1) degrees of freedom at the 0.05 level of significance

The t-star (t^*) is compared to the comparison t-star (t_c) using the decision rule: If t^* is equal to or greater than t_c, then conclude that there most likely has been a significant increase in this parameter; if t^* is less than t_c, then conclude that there most likely has not been a change in this parameter.

ATTACHMENT E

PERMIT ATTACHMENT E: COMPLIANCE SCHEDULE

This Compliance Schedule briefly lists particular requirements specified in the Permit and their associated due dates. The complete requirements are found in the referenced Permit Sections.

TABLE E-1
Compliance Schedule

Permit Section	Requirement	Due date
Submittals Due After Permit Issuance		
I.G.5	Permit Renewal	180 days before the expiration date of the Permit
II.C.12	Biennial Report	March 1st of even numbered years
II.D	Annual closure cost estimate	on an annual basis within sixty (60) days prior to the anniversary date of the establishment of the financial instrument for the Facility
IV.C.2	Facility-wide Groundwater Monitoring Work Plan	April 1st of each calendar year
III.E and Attachment D	Post-closure Care Sampling Events	19th year sampling event 2018

TABLE E-2

Corrective Action Work Plan Submittal Schedule

Unit ID Number	Unit Description	Work Plan Submittal Date
SWMU 1	Aeration Basins	Submitted
SWMU 2	Evaporation Ponds	January 31, 2019
SWMU 3	Empty Container Storage Area	March 1, 2012
SWMU 4	Old Burn Pit	June 30, 2012
SWMU 5	Landfill Areas	September 30, 2012
SWMU 6	Tank Farm	December 31, 2012
SWMU 7	Fire Training Area	March 31, 2013
SWMU 8	Railroad Rack Lagoon and Fan-Out Area	Submitted
SWMU 9	Drainage Ditch and Inactive Landfarm	June 30, 2013
SWMU 11	Secondary Oil Skimmer	December 31, 2013
SWMU 12	Contact Wastewater Collection System	March 31, 2014
SWMU 13	Drainage Ditch Between API Evaporation Ponds and Neutralization Tank Evaporation Ponds	June 30, 2014
SWMU 14	Old API Separator	Submitted
SWMU 15	New API Separator	September 30, 2014
SWMU 16	New API Separator Overflow Tanks	September 30, 2014
SWMU 17	Railroad Loading/Unloading Facility	December 31, 2014
SWMU 18	Heat Exchanger Bundle Cleaning Pad	March 31, 2015
SWMU 19	Asphalt Tank Farm (tanks 701-709, 713, 714)	June 30, 2015
SWMU 20	East Fuel Oil Loading Rack	June 30, 2015
SWMU 21	Crude Slop and Ethanol Unloading Facility	September 30, 2015
SWMU 22	Main Loading Racks	December 31, 2015
SWMU 23	Loading Rack Additive Tank Farm	March 31, 2016
SWMU 24	Retail Fuel Tank Farm (tanks 1-7, 912, 913, 1001, 1002)	March 31, 2016

Unit ID Number	Unit Description	Work Plan Submittal Date
SWMU 25	Crude Oil Tank Farm (tanks 101 and 102)	June 30, 2016
SWMU 26	Tank 573 (Kerosene tank)	December 31, 2014
SWMU 27	Process Units	April 30, 2019
SWMU 28	Boiler and Cooling Unit Area	September 30, 2016
SWMU 29	Warehouse and Maintenance Shop Area	December 31, 2016
SWMU 30	Equipment Yard and Drum Storage Area	March 31, 2017
SWMU 31	Laboratory	June 30, 2017
SWMU 32	Tanks 27 and 28	September 30, 2017
SWMU 33	Flare and Ancillary Tanks (tanks Z85V2, V85V3, Z84-T105)	December 31, 2017
SWMU 34	Storm Water Collection System	March 31, 2018
SWMU 35	Scrap Yard	June 30, 2018

ATTACHMENT F

PERMIT ATTACHMENT F:
HAZARDOUS WASTE MANAGEMENT UNITS

TABLE F-1
Permitted Unit Undergoing Post-Closure Care

Unit Identifier	Process Codes	Regulatory Status	General Information
Land Treatment Unit	D001, D007, K049, K050, K051, and K052	Post-Closure Permitted Unit	This regulated unit was actively operated until 1993. This Unit was used for degradation, transformation, or immobilization of hazardous wastes using microbial activity and soil characteristics

ATTACHMENT G

ATTACHMENT G: LIST OF UNITS

TABLE G-1
SOLID WASTE MANAGEMENT UNITS (SWMUS) & AREAS OF CONCERN (AOCS) REQUIRING CORRECTIVE ACTION

Unit ID Number	Unit Description	Notes
SWMU 1	Aeration Basins	
SWMU 2	Evaporation Ponds	
SWMU 3	Empty Container Storage Area	
SWMU 4	Old Burn Pit	
SWMU 5	Landfill Areas	
SWMU 6	Tank Farm	
SWMU 7	Fire Training Area	
SWMU 8	Railroad Rack Lagoon and Fan-Out Area	
SWMU 9	Drainage Ditch and Inactive Landfarm	
SWMU 10	Sludge Pits	
SWMU 11	Secondary Oil Skimmer	
SWMU 12	Contact Wastewater Collection System	
SWMU 13	Drainage Ditch Between API Evaporation Ponds and Neutralization Tank Evaporation Ponds	
SWMU 14	Old API Separator	
SWMU 15	New API Separator	
SWMU 16	New API Separator Overflow Tanks	
SWMU 17	Railroad Loading/Unloading Facility	
SWMU 18	Heat Exchanger Bundle Cleaning Pad	
SWMU 19	Asphalt Tank Farm (tanks 701-709, 713, 714)	
SWMU 20	East Fuel Oil Loading Rack	
SWMU 21	Crude Slop and Ethanol Unloading Facility	
SWMU 22	Main Loading Racks	
SWMU 23	Loading Rack Additive Tank Farm	

Unit ID Number	Unit Description	Notes
SWMU 24	Retail Fuel Tank Farm (tanks 1-7, 912, 913, 1001, 1002)	
SWMU 25	Crude Oil Tank Farm (tanks 101 and 102)	
SWMU 26	Tank 573 (Kerosene tank)	
SWMU 27	Process Units	
SWMU 28	Boiler and Cooling Unit Area	
SWMU 29	Warehouse and Maintenance Shop Area	
SWMU 30	Equipment Yard and Drum Storage Area	
SWMU 31	Laboratory	
SWMU 32	Tanks 27 and 28	
SWMU 33	Flare and Ancillary Tanks (tanks Z85V2, V85V3, Z84-T105)	
SWMU 34	Storm Water Collection System	
SWMU 35	Scrap Yard	

This list shall be modified if any additional SWMUs or AOCs are discovered or reported after the effective date of this Permit and the NMED determines that additional investigation of such SWMU or AOC is necessary.

TABLE G-2
SWMUs & AOCs
CORRECTIVE ACTION COMPLETE WITH CONTROLS

NAME	UNIT DESCRIPTION

TABLE G-3
SWMUs & AOCs
CORRECTIVE ACTION COMPLETE WITHOUT CONTROLS

NAME	UNIT DESCRIPTION

ATTACHMENT H

ATTACHMENT H: POST-CLOSURE COST ESTIMATES

TABLE H
Land Treatment Unit Cost Estimate

Activity	Cost Estimate in 2000 Part B Permit Application			Updated 2010 Cost Estimate				
	Material	**Cost Frequency** (over 30 years)	**Estimated Cost**	**Material**	**Frequency** (remaining 20 years)	**Revised Costs**	**Inflation Adjustment**[3]	**2010 Estimated Costs**
Monitoring Sample by Zone								
ZOI	4 samples at $1,450	3	$17,400	4 samples at $709[1]	2	$5,672		$5,672
Treatment Zone	4 samples at $1,450	3	$17,400	4 samples at $709[1]	2	$5,672		$5,672
Chinle Slope Wash	1 sample at $1,650	8	$13,200	1 sample at $834[2]	2	$1,668		$1,668
Sonsela	4 samples at $1,650	8	$52,800	4 samples at $834[2]	2	$6,672		$6,672
Sample QC	25% of $100,800		$25,200	25% of $19,684		$4,921		$4,921
Mobilization/Labor								
ZOI & Treatment Zone	3 events at $1,000/event		$3,000	2 events at $1,000/event		$2,000	$500.80	$2,501
Chinle Slope Wash & Sonsela	8 events at $2,000/event		$16,000	2 events at $2,000/event		$4,000	$1,001.60	$5,002
Cover Establishment								
Field Technician	$10,000		$10,000	completed		—		—
Microtox	$300 per test	9	$2,700	completed	—	—		—
Soil Amendments	352,000 ft^2 at 0.02/ft^2		$7,040	completed		—		—
Establish Vegetative Cover								
Top Soil	7.8 acres at $2,000/acre		$15,600	completed		—		—
Level LTU	7.8 acres at $950/acre		$7,410	completed		—		—
Plant Seed	7.8 acres at $750/acre		$5,850	completed		—		—
Water	1140 Mgal. at $1/Mgal.		$1,140	completed		—		—
Routine Inspection, Maintenance, and Repair								
Site Inspection	weekly inspection		$6,000	weekly inspection (remaining 20 years)		$4,000	$1,001.60	$5,002

Activity	Cost Estimate in 2000 Part B Permit Application			Updated 2010 Cost Estimate				
	Material	**Cost Frequency** (over 30 years)	**Estimated Cost**	**Material**	**Frequency** (remaining 20 years)	**Revised Costs**	**Inflation Adjustment[3]**	**2010 Estimated Costs**
Security Device	$100 annually		$3,000	$100 annually		$2,000	$500.80	$2,501
Runon/Runoff	$1,000 annually to maintain perimeter berm		$30,000	$1,000 annually to maintain perimeter berm		$20,000	$5,008.80	$25,008
Prepare Certification								
Certify LTU Closure	120 hours at $125/hr		$15,000	120 hours at $125/hr		$15,000	$3,756.00	$18,756
Notice in Deed	6 hours at $150/hr		$900	6 hours at $150/hr		$900	$225.36	$1,125
Certify Final Closure	120 hours at $125/hr		$15,000	120 hours at $125/hr		$15,000	$3,756.00	$18,756
Notice in Deed	6 hours at $150/hr		$900	6 hours at $150/hr		$900	$225.36	$1,125
Total Task			$265,540					$104,381
Gallup Overhead	10%		$26,554					$10,402
Contingency	10%		$26,554					$10,402
TOTAL			$371,756					$125,185

Mgal. = million gallons

ZOI = Zone of Incorporation

1 = 8260 @ $120, 8270 @ $280, 8015 @ $80, metals @ $229

2 = 8260 @ $120, 8270 @ $280, 8015 @ $80, metals @ $229, pH@ $35, cations/anions @ $90

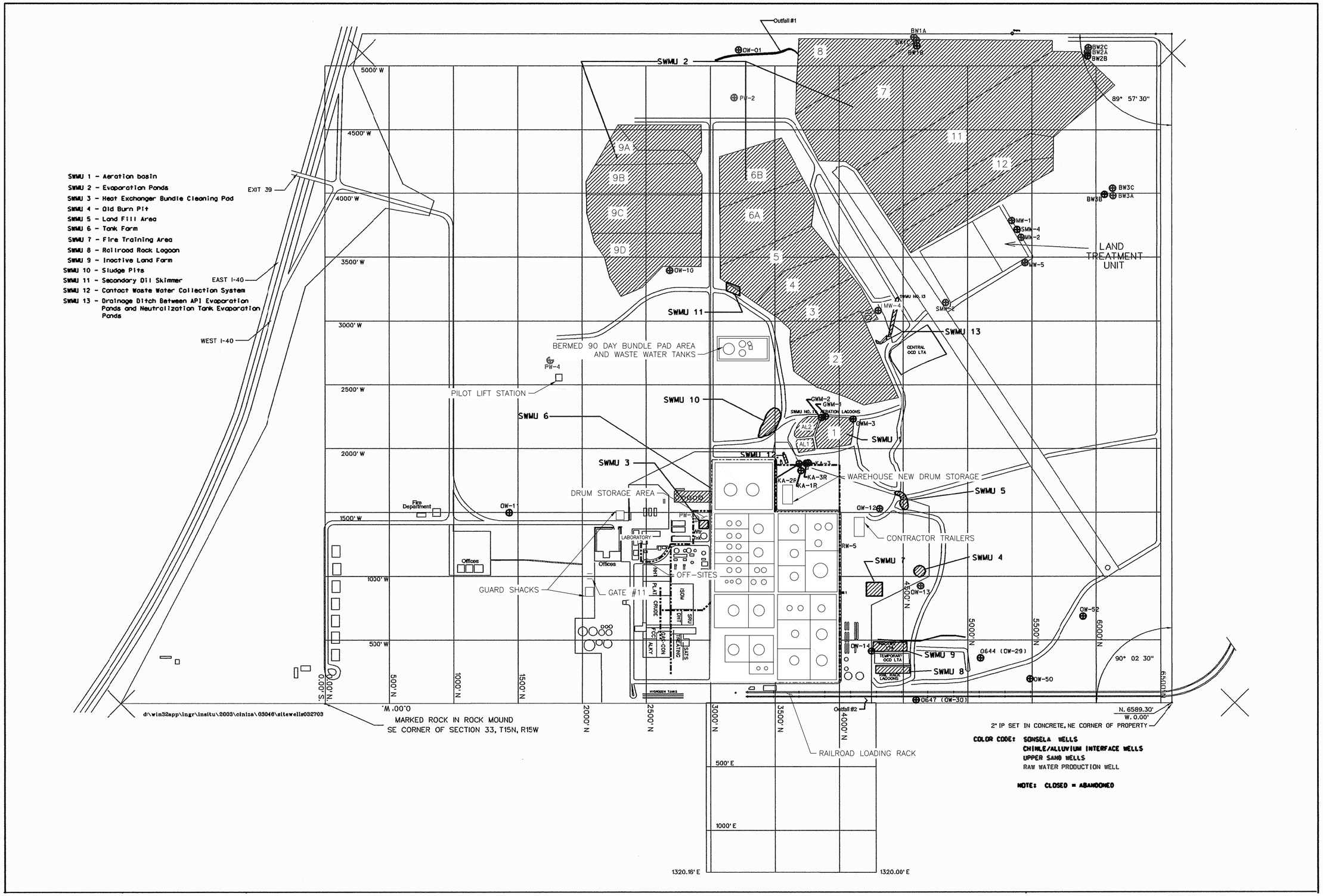
3 = Inflation adjustment for costs in the original 2000 estimate. Annual inflation adjustment for years 2001 through 2010 based on implicit price deflator of US Gross National Product of most recent year divided by previous year; 2001 = 2.06%, 2002 = 2.17%, 2003 = 1.3%, 2004 = 1.67%, 2005 = 2.37%, 2006 = 3.03%, 2007 = 2.94%, 2008 = 3.95%, 2009 = 2.18%, 2010 = 0.96%; cumulative adjustment of 25.04%

ATTACHMENT I

ATTACHMENT I: LONG-TERM MONITORING AND MAINTENANCE PLANS

Reserved

ATTACHMENT J



Source: Western Refining, Reference Drawing File: Z-01-126, Dated November 11, 1998.

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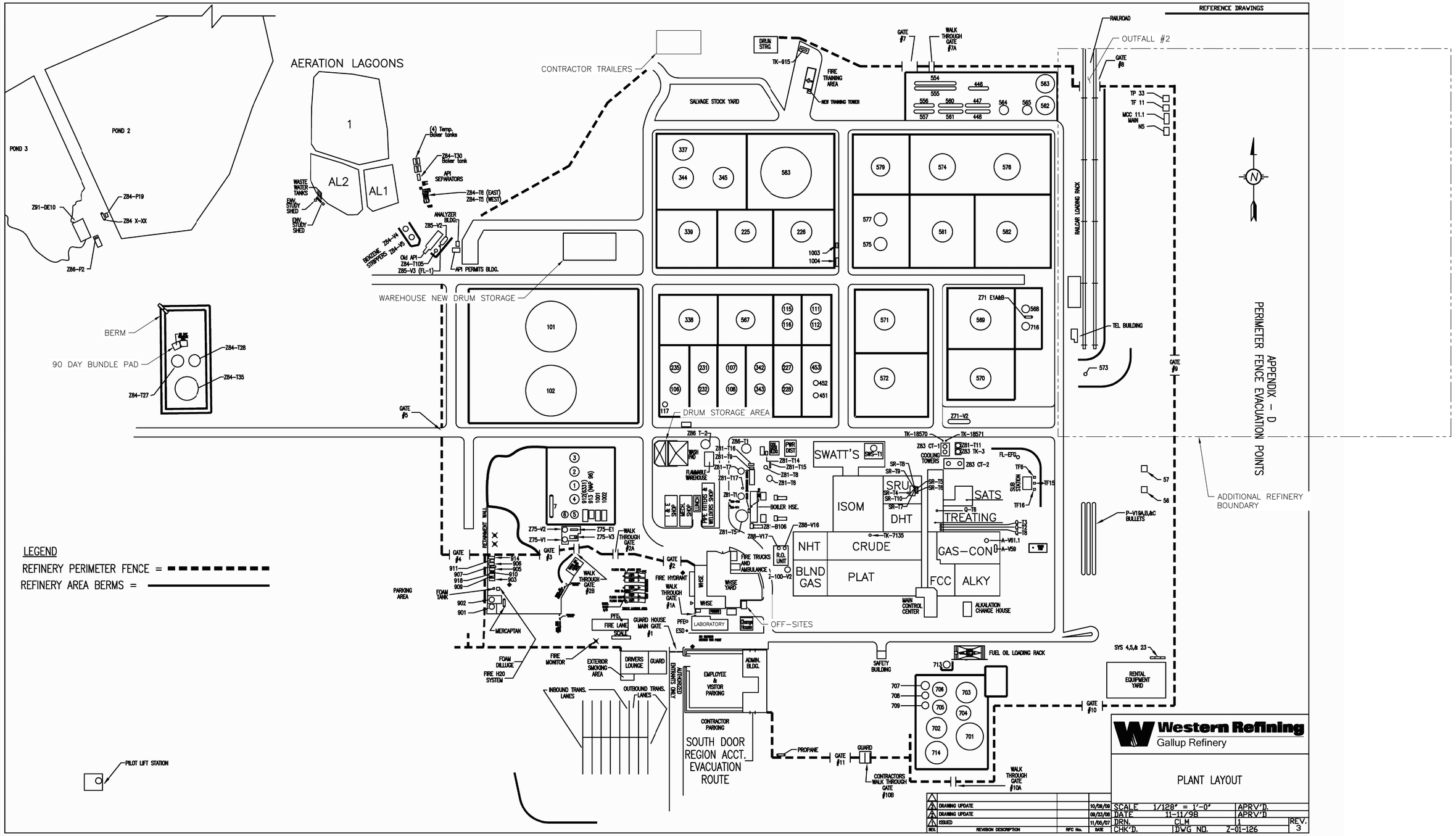
FIGURE 1

FACILITIES AND WELLS

WESTERN REFINING COMPANY L.L.C.
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: GP	Scale: 1" = ~500'	Date: 8/24/11	File: 697-FACILITIES-WELLS-201108



Source: Western Refining, Reference Drawing File: Z-01-126, Dated November 11, 1998.

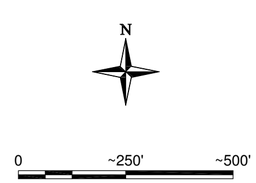


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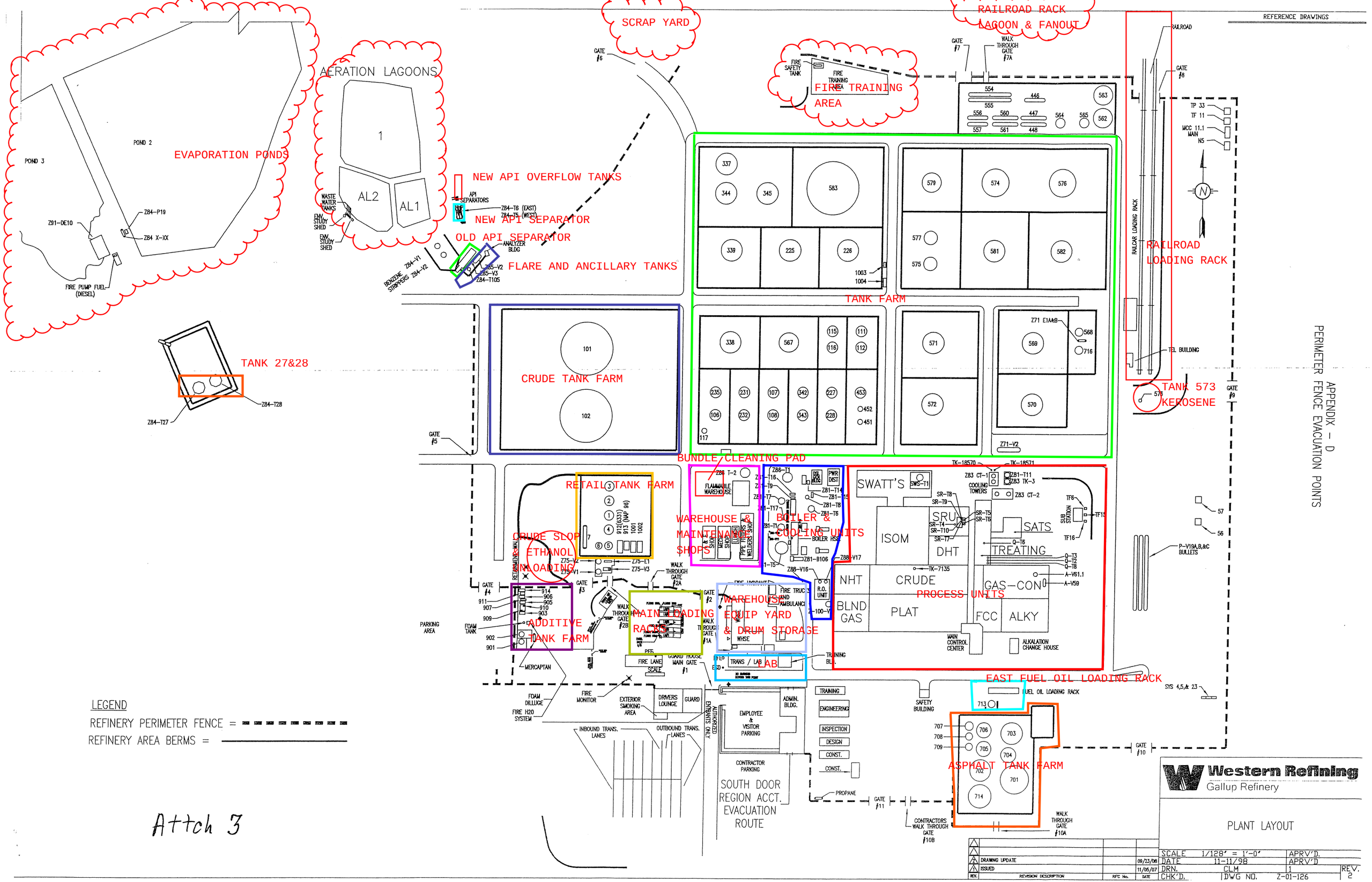
FIGURE 2

PLANT LAYOUT

WESTERN REFINING COMPANY L.L.C.
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: GP	Scale: 1" = ~250'	Date: 8/24/11	File: 697-PLANTLAYOUT-201108


EVAPORATION PONDS
POND 2
POND 3
Z91-DE10
Z84-P19
Z84 X-XX
FIRE PUMP FUEL (DIESEL)
AERATION LAGOONS
1
AL2
AL1
WASTE WATER TANKS
ENV. STUDY SHED
SCRAP YARD
GATE #6
NEW API OVERFLOW TANKS
API SEPARATORS
Z84-T6 (EAST)
Z84-T5 (WEST)
NEW API SEPARATOR
OLD API SEPARATOR
ANALYZER BLDG
BENZENE STRIPPERS
Z84-V1
Z84-V2
Z85-V2
Z85-V3
Z84-T105
FLARE AND ANCILLARY TANKS
TANK 27&28
Z84-T28
Z84-T27
CRUDE TANK FARM
101
102
GATE #5
FIRE TRAINING AREA
FIRE SAFETY TANK
FIRE TRAINING AREA
GATE #7
WALK THROUGH GATE #7A
RAILROAD RACK LAGOON & FANOUT
TANK FARM
337
344
345
583
339
225
226
1003
1004
579
574
576
577
575
581
582
338
567
115
116
111
112
235
231
107
342
227
453
106
232
108
343
228
452
451
117
571
572
569
570
568
716
Z71 E1A&B
Z71-V2
BUNDLE/CLEANING PAD
RETAIL TANK FARM
912(6331)
913 (MAP 96)
1001
1002
WAREHOUSE & MAINTENANCE SHOPS
BOILER & COOLING UNITS
FLAMMABLE WAREHOUSE
Z86 T-2
Z86-T1
Z86-T16
Z86-T9
Z86-T17
Z86-T7
Z86-T5
Z86-T4
Z86-T3
Z86-T2
Z86-T1
Z86-T11
Z86-T14
Z86-T15
Z86-T8
Z86-T6
BOILER HSE
Z86-B106
Z86-V17
Z86-V16
R.O. UNIT
Z-100-V
CRUDE SLOP ETHANOL LOADING
REFORMER WALL
Z75-V4
Z75-V1
Z75-E1
Z75-V3
GATE #3
WALK THROUGH GATE #2A
GATE #2
WALK THROUGH GATE #2B
WALK THROUGH GATE #1A
ADDITIVE TANK FARM
914
906
905
910
903
911
907
909
902
901
PARKING AREA
FOAM TANK
MERCAPTAN
MAIN LOADING RACKS
PET.
GUARD HOUSE
MAIN GATE #1
FIRE LANE
SCALE
WAREHOUSE, EQUIP YARD & DRUM STORAGE
FIRE TRUCK AND AMBULANCE
WHSE
TRANS / LAB
LAB
TRAINING BLD.
SWATT'S
SWS-T1
TK-18570
TK-18571
Z83 CT-1
Z81-T11
Z83 TK-3
COOLING TOWERS
Z83 CT-2
SRU
SR-T8
SR-T9
SR-T4
SR-T10
SR-T17
SR-T5
SR-T6
Q-T6
ISOM
DHT
SATS
TREATING
SUB STATION
TF6
TF15
TF16
T3
T2
T8
A-V61.1
A-V59
TK-7135
NHT
CRUDE
GAS-CON
BLND GAS
PLAT
FCC
ALKY
PROCESS UNITS
MAIN CONTROL CENTER
ALKALATION CHANGE HOUSE
RAILROAD
GATE #8
RAILCAR LOADING RACK
TP 33
TF 11
MCC 11.1 MAIN
N5
N
RAILROAD LOADING RACK
TEL BUILDING
TANK 573 KEROSENE
573
GATE #9
57
56
P-V19A,B,&C BULLETS
SYS 4,5,& 23
EAST FUEL OIL LOADING RACK
FUEL OIL LOADING RACK
713
SAFETY BUILDING
ASPHALT TANK FARM
707
708
709
706
705
703
704
702
701
714
GATE #10
WALK THROUGH GATE #10A
CONTRACTORS WALK THROUGH GATE #10B
GATE #11
PROPANE
FOAM DILLUGE
FIRE H20 SYSTEM
FIRE MONITOR
EXTERIOR SMOKING AREA
DRIVERS LOUNGE
GUARD
INBOUND TRANS. LANES
OUTBOUND TRANS. LANES
AUTHORIZED ENTRANTS ONLY
EMPLOYEE & VISITOR PARKING
CONTRACTOR PARKING
SOUTH DOOR REGION ACCT. EVACUATION ROUTE
ADMIN. BLDG.
TRAINING
ENGINEERING
INSPECTION
DESIGN
CONST.
REFERENCE DRAWINGS
APPENDIX - D
PERIMETER FENCE EVACUATION POINTS
LEGEND
REFINERY PERIMETER FENCE =
REFINERY AREA BERMS =
Western Refining
Gallup Refinery
PLANT LAYOUT
SCALE 1/128" = 1'-0"
DATE 11-11-98
DRN. CLM
CHK'D.
DWG NO. Z-01-126
REV. 2
APRV'D.
APRV'D
DRAWING UPDATE 09/23/08
ISSUED 11/05/07
REV. REVISION DESCRIPTION RFC No. DATE

Attch 3