CERTIFIED MAIL # 7006 0810 0003 7020 6707

May 28, 2008

James Bearzi, Bureau Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Bldg 1
Santa Fe, NM 87505

Re: Response to March 31, 2008 NOTICE OF DISAPPROVAL
Closure Plan for the Aeration Lagoons
Giant Refining Company, Bloomfield Refinery
EPA ID# NMD089416416
HWB-GRCB-07-006

Dear Mr. Bearzi:

Giant Refining Company, Bloomfield Refinery has prepared the following responses to your comments (dated March 31, 2008) on the referenced closure plan. The revised closure plan is enclosed.

Comment 1
Giant references the Clean Water Act (CWA) and "zero discharge." These phrases are not related to RCRA closure of the North and South Aeration Lagoons and have been applied incorrectly. Giant must revise the Closure Plan to remove all references to these terms. (See pages 3, 5, and 6)

Response: Giant Refining Company (Giant) does not agree with New Mexico Environment Department's (NMED's) position regarding the applicability of the Clean Water Act (CWA) to the aeration lagoons; however, the reference to the CWA and "zero discharge" have been removed from the closure plan at NMED's direction. Giant's willingness to make this revision does not represent any change in (or waiver of) Giant's position about the regulatory status of the aeration lagoons. Giant refers NMED to earlier submittals by Giant to the NMED on this topic which reflect Giant's continued position.

Comment 2
Giant states in Section 2.2 (ABT Unit Operations), page 6, paragraph 1, that "[t]he outflow from the North ABT-E goes to a sump, where the non-hazardous wastewater can be pumped for the final disposition, either in CWA zero discharge evaporation ponds or into an SDWA Class I permitted non-hazardous UIC well."

The evaporation ponds are not CWA zero discharge ponds, but simply evaporation ponds. For clarity and consistency, Giant must revise the Closure Plan to remove reference to the evaporation ponds as CWA zero discharge. (See Comment 1)

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Response: Similarly, to our response to Comment 1 above, Giant does not agree with NMED's characterization of the evaporation ponds; however, the reference to "CWA zero discharge" has been removed at NMED's direction. Giant's willingness to make this revision does not represent any change in (or waiver of) Giant's position about the regulatory status of the evaporation ponds. Giant refers NMED to earlier submittals by Giant to the NMED on this topic which reflect Giant's continued position.

Comment 3

Giant must revise Section 2.2 (ABT Unit Operations) to state where, within the wastewater treatment system, the benzene strippers are located (i.e., before or after the API separator).

Response: Section 2.2 has been revised to describe the current configuration of the wastewater treatment components. The benzene strippers were added between the API separator and the South Aggressive Biological Treatment (ABT) unit. The strippers became operational on October 18, 2007.

Comment 4

Section 3.1 (Contingency Plan) discusses the use of the surge tank to hold wastewater in the event of a major failure. This Section must be revised to address how the surge tank will be cleaned and how residual sludge, potentially F037 and F038 listed waste, will be handled once the wastewater in the surge tank is removed. In addition, this Section must be revised to state that the wastewater from the surge tank will be routed through the wastewater treatment system upstream of the API separator.

Response: Giant wishes to clarify that Section 3.1 (Contingency Plan) discusses the actions to be taken in response to a failure of the benzene strippers, not up-stream components (e.g., the API separator). Any wastewater that is directed to the surge tank when the strippers are not operational will be removed from the tank as soon as the strippers are once again operational. As directed by NMED, the wastewater removed from the surge tank will be routed through the wastewater treatment system upstream of the API separator. The closure plan has been revised to reflect this process.

It is unlikely that F037 or F038 listed waste will accumulate in the surge tank, which will only be used when the strippers are not operational. However, to address the NMED's comment, Section 3.1 has been revised to include inspections of the surge tank that will be conducted once the fluids have been removed from the tank and run back through the API separator and strippers. If any F037 or F038 listed waste is identified in the surge tank, then the material will be physically removed via the tank manway and sent off-site for disposal in accordance with all applicable Hazardous Waste regulations.

Comment 5

In Section 4.1 (Closure Procedures), Giant states on page 9, paragraph 3 that, "[a]fter completion of the modified closure of the South ABT unit, the aggressive biological treatment system in the South ABT unit will become operational and the wastewater will be routed from the API separator/benzene stripper system back to the South ABT unit. Following appropriate aggressive biological treatment, the treated wastewater will then be routed from the South ABT unit directly for disposition via evaporation and/or UIC – permitted reinjection, bypassing the North ABT. After completion of the modified closure for the North ABT unit, it will be restored to service as an additional wastewater treatment unit."

The term "modified closure" is not defined in the Closure Plan. The actions proposed in the Closure Plan could be described as "partial closure" of the aeration lagoons, where each aeration lagoon is removed from service, the existing water and sludge is removed and the liner is cleaned, inspected, and, if necessary, repaired before being returned to service. Giant must revise the Closure Plan to either define the term "modified closure" or instead define and use the term "partial closure" to describe the activities involved in closing the aeration ponds above the liners.

Response: The term "modified closure" has been retained and this term is now defined as "the process where each lagoon is removed from service, the existing water and sludge is removed and the liner is cleaned, inspected, and, if necessary, repaired before being return to service."

Comment 6

In Section 4.1 (Closure Procedures), page 9, paragraph 3 and 4, Giant makes the following statements, respectively "[f]ollowing appropriate aggressive biological treatment, the treated wastewater will then be routed from the South ABT unit directly for disposition via evaporation and/or UIC – permitted reinjection, bypassing the North ABT: and "[s]uch aeration shall continue at a minimum long enough to prevent F037 and F038 formation."

Giant must revise the Closure Plan to define "appropriate" aggressive biological treatment and define "what long enough is" to prevent the formation of F037 and F038 formation.

Response: The closure plan has been revised to clarify that the "appropriate" aggressive biological treatment will be conducted in accordance with 40 CFR §261.31(b)(2)(i). See the response to comment no. 7 below regarding the removal of the sentence, "Such aeration shall continue at a minimum long enough to prevent F037/F038 formation.

Comment 7

In Section 4.1 (Closure Procedures), page 9, paragraph 4, Giant states "[e]ach ABT unit will be decontaminated following the procedures discussed below. After the flow of decharacterized wastewater to an ABT unit is shut off as part of the closure process, aggressive aeration of the nonhazardous wastewater will continue. Such aeration shall continue at a minimum long enough to prevent F037 and F038 formation. After such residence time and aeration, and sufficient sampling to confirm the lack of benzene characteristic, this nonhazardous wastewater will be pumped to the evaporation units and/or UIC disposal well assuming confirmation of parameters appropriate for such nonhazardous wastewater disposition by injection."

Giant must revise the Closure Plan as follows: once the wastewater flow is routed on the North ABT unit, the remaining wastewater in the South ABT unit must be rerouted back through the Wastewater Treatment Unit system (WWTU) upstream of the API separator, which will then enter the North ABT unit. This eliminates the need for sampling because the water will be treated through the WWTU system. This also removes the possibility of wastewater being potentially hazardous for benzene from entering the evaporation ponds and/or Underground Injection Control (UIC) wells for disposition.

Response: The closure plan has been revised to reflect the changes in the closure process as directed by the NMED. Once flow has been stopped to the South ABT Unit, the wastewater in the South ABT Unit will be pumped back to the WWTU upstream of the API separator.

Comment 8

In Section 4.1 (Closure Procedures), page 9, paragraph 5, Giant state "[t]he sludges (including some attendant watery solution entrained with the sludges) in the ABT unit above the liner will be sampled for hazardous characteristics. A representative number of samples will be collected sufficient to account for potentially variability. If the sludges do not exhibit any hazardous characteristics, they will be removed from the ABT units by a vacuum truck for appropriate disposal. Additional wastes not amenable to vacuum removal may be removed through careful shovel or other similar small-scale operations in such a manner as to assure protection of the 100-mil liner. The remaining materials [after vacuum and other removal operations have occurred] and the entire top liner will be powerwashed with water. This nonhazardous washwater will then be pumped to the evaporation units/UIC wells as appropriate for disposition." NMED has the following comments:

a. *Giant must revise the Section to identify all analytical methods to be performed on the sludge samples to determine if the sludge is hazardous (this must include EPA Method 8260, EPA method 8270, metals, reactivity, ignitability, corrosivity, and toxicity),*

Response: A specific list of analytical methods is not included in the closure plan because 40 CFR Part 261, Subpart C – Characteristics of Hazardous Waste provides for the use of more than a single analytical method to determine if a solid waste is a hazardous waste by "characteristic." The closure plan has been changed to clarify that the sludges will be sampled for hazardous characteristics in accordance with 40 CFR Part 261, Subpart C – Characteristics of Hazardous Waste.

b. *Giant must revise this Section to define and describe what a representative number of samples are in terms of unit volume,*

Response: The closure plan has been amended to reflect that a sample of the sludge will be collected for waste characterization at a minimum of one sample per each 10 cubic yards of sludge.

c. *Giant must revise this Section to state that all washwater resulting from the top liner being powerwashed will be placed in the WWTU upstream of the API separator where it will be treated prior to discharge to the surface impoundment, evaporation ponds and / or UIC disposal well.*

Response: The closure plan has been revised to reflect the requested change. The washwater from the power washing will be placed in the WWTU upstream of the API separator and this process will be the same regardless of the results of the waste characterization sampling.

Comment 9

In Section 4.1 (Closure Procedures), page 10, paragraph 1, Giant states "(i)f wastes removed from the ABT units exhibit one or more hazardous characteristics, the wastes will be removed and placed in appropriate RCRA tanks, containers for disposal offsite as hazardous waste. All of the equipment used will be appropriately decontaminated with any rinse waters being appropriately handled. In addition, the remaining materials (after vacuum and other removal operations have occurred) and the entire top liner then will be powerwashed with water. The liner/residue washwater will be collected in the impoundment and pumped back to the WWTU system for handling through the oil/water separator and benzene strippers, followed by aggressive biological treatment in the other ABT unit still in service. This procedure will be followed even if the washwaters do not exhibit a hazardous characteristic."

Giant must revise the Closure Plan to describe how the equipment will be decontaminated and identify how the rinse water will be "appropriately" handled.

Response: Additional detail regarding the cleaning of equipment that comes in contact with the sludge has been added to the closure plan. All affected equipment will be cleaned with a high pressure steam cleaner. The resulting rinse water will be collected and placed in the WWTU upstream of the API separator.

Comment 10

In Section 4.1 (Closure Procedures), page 10, paragraph 2, Giant discusses the inspection of the liners and states if damage to the top liner is present, then the underlying liner will be checked for damage and repaired as necessary.

Giant must revise the Closure Plan to describe how the underlying liner will be checked for damage. For example, will the top liner be removed, and if so, how will it be removed, and if not, what procedures will be utilized to check for damage of the underlying liner.

Response: The "RCRA" liners, which consist of an upper 100-mil liner and 60-mil lower liner, were placed over another 100-mil HPDE liner, which is then underlain by a composite liner with a French drain leachate collection system. No fluids have every accumulated in the lower French drain collection system, indicating that the lower (60-mil) RCRA liner is intact. If there is an indication of damage to the upper 100-mil RCRA liner, then the upper 100-mil liner will be removed over a large enough extent so that the lower 60-mil RCRA liner that can be inspected, and repaired, as necessary.

Comment 11

In Section 4.1 (Closure Procedures), page 10, paragraph 2, Giant states "[i]f the lowermost 100-mil liner is damaged, then the underlying environmental media (e.g., 6" layer of soil with 33% bentonite and native soils) will be investigated to determine if mobile non-aqueous phase liquid (NAPL) hydrocarbons are present immediately beneath the ponds. Only if mobile NAPL is present immediately beneath the ponds, which could migrate to groundwater, will remediation of the underlying environmental media be conducted to remove the mobile NAPL. Otherwise, any impacts to the underlying media should not present a threat to human health or the environment due to the fact that the multiple overlying liners will prevent any direct contact to or leaching of contaminants."

If any contamination is discovered to the underlying environmental media beneath the ponds, (not just mobile NAPL) an investigation must be implemented to determine the best course of remedial action, if any. Giant must revise this Section to state that any contamination discovered beneath the evaporation ponds will be investigated and the extent defined.

Response: The closure plan was prepared pursuant to NMED's letter of June 1, 2007, which required that Giant "remove waste contained by the impoundment liners" and clean, inspect, and, as necessary, repair the impoundment liners. The letter further stated that a post-closure care permit would be required and that "The permit will require Giant to conduct short-term and long-term monitoring of soil and groundwater in the vicinity of the surface impoundment." There was no requirement for the closure plan to include an investigation of the nature and extent of any impacts beneath the ABT units. This directive is also in conflict with comment no. 5 above, which acknowledges the "partial closure" of the units and specifies the required activities, which do not include an investigation of the underlying environmental media.

Comment 12

In Section 4.1 (Closure Procedures), page 10, paragraph 3, Giant sates "[a]fter all repairs are complete, the impacted leachate collection systems will be flushed with clean water. The collected flush water will be sampled. If it tests hazardous, it will be disposed of offsite and the flushing will be repeated. When the flush water tests non hazardous, then that first nonhazardous flush will be pumped back to the WWTU system for handling through the API separator and benzene strippers."

Giant must revise the Closure Plan to describe the components of the leachate collection system. Giant must also revise Section 4.1 to state that all water used to flush the leachate collection system will be put back through the WWTU system upstream of the API separator. The only sampling necessary is to determine if the flush water from the leachate collection system is not hazardous. This Section must also be revised to state the analytical methods what will be used to analyze the flush water samples.

Response: The closure plan is amended to include a description of the leachate collection system, which includes a 60-mil lower liner, a geo-net leachate collection layer, and a leachate collection sump. The flush water will be put back through the WWTU system upstream of the API separator, as directed. Samples of the flush water will be collected and analyzed for hazardous characteristics using methods specified in 40 CFR Part 261, Subpart C – Characteristics of Hazardous Waste. Upon demonstration that the flush water is non-hazardous, flushing will be terminated and any remaining fluids that collect in the leachate collection system will be placed in the WWTU system upstream of the API separator.

Comment 13

As a general rule, all washwater, rinse water, and flushwater generated during the closure process must be sent back through the WWTU system upstream of the API Separator. This must be revised throughout the Closure Plan where not already addressed by these comments.

Response: The closure plan has been revised to require all washwater, rinse water, and flush water to be sent back through the WWTU system upstream of the API separator, as directed by the NMED.

Comment 14

As part of the Closure Plan, Giant must include a section for the installation of four monitoring wells and propose the locations. A monitoring well must be located on the western side of the South Aeration Lagoon. Another well must be located at the northern tip of the North Aeration Lagoon and two wells must be installed on the upgradient side of the ponds, downgradient from the tank farm. A figure must be provided that depicts the proposed locations. Proposed well installation details such as the anticipated well depths and well construction must be included in the Revised Closure Plan.

Response: In NMED's letter dated June 1, 2007, which instructed Giant in the preparation of the closure plan and noted the requirement for a post-closure care permit, the NMED stated that, "The permit will require Giant to conduct short-term and long-term monitoring of soil and groundwater in the vicinity of the surface impoundment." Giant requests that installation of the ground water monitoring system be implemented pursuant to the post-closure care permit instead of the closure plan for the aeration lagoons.

If you have questions or would like to discuss the revised closure plan, please contact me at (505) 632-4171.

Sincerely,

James R. Schmaltz
Environmental Manager
San Juan Refining Company
Bloomfield Refinery

cc: Hope Monzeglio – NMED HWB
Wayne Price – NMOCD – (w/encl.)
Dave Cobrain – NMED HWB
John Kieling – NMED HWB
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Closure Plan
North and South Aeration Lagoons
Bloomfield Refinery

Regulated Unit EPA ID# NMD089416416
HWB-GRCB-07-002

Giant Refining Company
Bloomfield, New Mexico

May 2008

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Section 1
Introduction

The Bloomfield Refinery is located immediately south of Bloomfield, New Mexico in San Juan County. The physical location address is #50 Road 4990, Bloomfield, New Mexico 87413. The Bloomfield Refinery is located on 285 acres (0.45 square miles). The site is located on a bluff approximately 100 feet above the south side of the San Juan River, a perennial river that flows to the west.

Bordering the facility is a combination of federal and private properties. Public property managed by the Bureau of Land Management lies to the south. The majority of undeveloped land in the vicinity of the facility is used extensively for oil and gas production and, in some instances, grazing. The town of Bloomfield is located to the north of the refinery, across the San Juan River. U.S. Highway 44 is located approximately one-half mile west of the facility. The topography of the site is generally flat with low-lying areas to the east of the process area.

The Bloomfield Refinery is a crude oil refinery currently owned by the San Juan Refining Company and operated by Giant Industries Arizona, Inc., which is a wholly owned subsidiary of Western Refining Company. The Bloomfield Refinery generally processes crude oil from the Four Corners area transported to the facility by pipeline or tanker truck and crude from West Texas transported by pipeline.

The Bloomfield Refinery has an approximate refining capacity of 18,000 barrels per day. Various process units are operated at the facility, including crude distillation, reforming, fluidized catalytic cracking, sulfur recovery, merox treater, catalytic polymerization and diesel hydrotreating. Current and past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, naphtha, residual fuel, fuel oils and LPG.

This Closure Plan addresses the "closure" of the North and South Aeration Lagoons. Monitoring data of the effluent from the API Separator, which discharges into the South Aeration Lagoon, has indicated that concentrations of benzene above the toxicity characteristic (TC) regulatory threshold of 0.5 milligrams per liter (mg/l) have entered the aeration lagoons. Western Refining does not desire to operate these lagoons as hazardous waste treatment units and thus the ponds will be cleaned out to remove all hazardous

waste, hazardous constituents, decomposition products, and leachate. Closure of the aeration lagoons will be conducted in accordance with an Enforceable Document (July 27, 2007 NMED Order). Additional pretreatment in the form of benzene strippers and a 10,000 barrel surge tank has been installed to ensure that wastewater with hazardous levels of benzene does not enter the aeration lagoons in the future.

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Section 2
Wastewater Treatment Unit Description and Operation

2.1 Environmental Regulatory Activities

All oil refineries produce process wastewater, which today must be managed in accordance with a variety of environmental requirements intended to assure adequate and appropriate protection of public health and the environment. Three federal regulatory programs [the Clean Water Act, the Resource Conservation and Recovery Act (RCRA), and the Safe Drinking Water Act (SWDA)] have major significance for Bloomfield Refinery process wastewater. Two of these federal programs at Bloomfield are directly administered by the State of New Mexico, as it has primacy over the RCRA and SDWA UIC programs. In addition, there are additional state regulatory programs with varying applicability, including those administered by New Mexico Oil Conservation Division (OCD).

Initially, beginning in 1972 under the Clean Water Act regulatory program, EPA promulgated petroleum refinery wastewater management requirements pursuant to the Clean Water Act NPDES permit program. The principal federal regulations implementing this CWA program as it applies to petroleum refineries are found at 40 C.F.R. Parts 122 and 419. The Bloomfield Refinery, like other oil refineries impacted by 40 C.F.R. Part 419, had implemented a series of process wastewater treatment operations, including primary treatment of wastewaters with an oil/water separator and secondary biological treatment in wastewater ponds to further reduce organics in the petroleum refinery wastewater. These two ponds where such biological degradation of organics occurred were referred to at the time as the North Oily Water Pond and the South Oily Water Pond.

A second major regulatory program, the RCRA regulations, affecting hazardous wastewaters was promulgated by EPA on November 19, 1980. Initially, these applied only to certain sludges created by petroleum refinery wastewater management, such as API oil/water separator sludge which was listed as K051 hazardous waste. In November, 1980, the Bloomfield Refinery operator applied for a Part A permit as a generator, and TSD as a protective filing for its so-called oily water ponds. It was later determined they were not disposing of listed hazardous waste on site and since D018 wastewater was not part of the 1980 EP toxicity test (it only became regulated after the 1990 TCLP toxicity test was

adopted), in 1982 they petitioned for reclassification under a generator only status.[1] In 1982/1983, the liquids and sludge were removed from the oily water ponds and disposed of offsite. Impacted soils were also excavated and the ponds were lined. This activity included the placement of a 33% bentonite composite liner equipped with a French drain system, with a 100 mill high density polyethylene (HDPE) liner on top.

In 1990, a significant revision to these regulations made most petroleum refinery process wastewater into D018 benzene characteristic hazardous waste, leading the Bloomfield Refinery to submit a Part B RCRA permit application[2] in the mid-1990s and to operate its biological treatment impoundments pursuant to RCRA interim status as a regulated unit. To comply with RCRA interim status, the Bloomfield Refinery upgraded and retrofitted the regulated unit with an additional set of RCRA double liners and leak detection/leachate collection system over and above what the Bloomfield Refinery had initially installed in 1982/1983.

The listing of F037/F038 sludges by EPA as hazardous (effective in 1991) effectively mandated a certain level of biological treatment and retention time in the biological treatment impoundments at the Bloomfield Refinery.[3] Thereafter, the aeration-enhanced impoundments were called the North Aeration Lagoon (NAL) or the South Aeration Lagoon (NAL) [also referred to herein as the North Aggressive Biological Treatment (ABT) Units (two impoundments known as NABT-E and NABT-W) and the South ABT Unit]. The compliance strategy employed aggressive biological treatment of wastewaters to make them safe for the environment, followed by disposition through evaporation ponds and a Class I underground injection well permitted consistent with the Safe Drinking Water Act UIC program

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[1] On November 26, 1985, the Bloomfield Refinery agreed to take an on-site landfill [where some of the materials from the 1982 impoundment cleanout had been placed] through RCRA closure. During 1989, these materials were removed and eventually determined by EPA delisting to be non-hazardous for offsite disposal. *See*, Hazardous Waste Delisting Petition, Petroleum Contaminated Soil, dated April 15, 1991 (*ERM-Rocky Mountain, Inc.*)

[2] This Part B application submitted in the mid-1990s included a RCRA closure plan for the biological treatment impoundments, as discussed later in this document.

[3] Integral to the operation of the Bloomfield Refinery, as with any oil refinery in the United States, is the operation of an aggressive biological treatment (ABT) unit system for wastewater management, mandated by EPA regulations regarding the listing of certain petroleum refinery wastes (F037/F038) that became effective in May, 1991. EPA regulations, as adopted by NMED, effectively require each petroleum refinery to implement an ABT system to biological treat organics with regulatorily-specified ABT technology to remove organics and eliminate F037/F038 formation. The Bloomfield Refinery has had such advanced organic aeration in place as required since that time, and these EPA-required treatment systems operate as multi-lined ABT wastewater treatment units at Bloomfield, backed up with a double set of leak detection/leachate collection systems, over and above what has been technologically required under EPA regulations.

requirements.[4] As discussed in Section 3.0, additional upgrades to the wastewater treatment system were recently completed in the fall of 2007.

[4]EPA promulgated regulatory requirements to assure that wastewater managed by UIC disposition not pose a risk to public health and the environment (40 C.F.R. Parts 144-146), but those did not apply at the Bloomfield Refinery until 1994 when Bloomfield installed a Class I UIC well for wastewater management.

2.2 ABT Unit Operations

The refinery process wastewater currently generated (approx. 80 gallons per minute (gpm)) at the Bloomfield Refinery is managed first by treatment in an API oil/water separator, then the volatile components are removed via benzene air strippers and the final treatment (biological) occurs in three ABT impoundments. The ABT units, from top to bottom, include:

- a 100-mil HDPE top liner;
- a geonet for collecting leaks that drain to a sump equipped with a 6" observation pipe;
- a 60-mil HDPE secondary liner;
- a composite geotextile/geonet with a 4" observation pipe;
- a cement amended sand that was compacted into a 1.5% slope;
- a 100-mil HDPE liner;
- a French drain system, which directs any collected fluids to a central sump; and
- a 6" layer of soil with 33% bentonite mixed into it.

The wastewater is currently discharged from the API separator, passes through the benzene air stripper and into the South ABT unit, which averages 4.4 feet in depth and has a surface area of about 6,652 square feet. The total volume is approximately 216,000 gallons. At 80 gpm, the holding time in the pond is 1.9 days. The impoundment is equipped with two, 5-horsepower aerators sized to prevent F037/F038 waste generation through high rate aeration. The system was designed to reduce benzene concentrations from approximately 10 ppm to less than 0.5 ppm. With the installation of the benzene stripper equipment in October 2007, the wastewater is now "decharacterized" below the benzene TC levels prior to discharge into this first (South) ABT unit. As a result, this unit has received its final volume of hazardous wastewater and no longer will be required to treat hazardous wastewater.

Wastewater from the first (South) ABT unit, which has already been reduced below TC levels by design, is routed to the North ABT unit through an overflow pipe from the South ABT unit. The second ABT unit is comprised of two impoundments that are operated together, and these are generally referred to as the North ABT unit. The first of the two impoundments in the North area (which can be referred to as North ABT-W as it is the westernmost of the two portions of the North ABT unit) is separated from the second of the two in the North area (the second can be referred to as North ABT-E) by a concrete divider. An overflow pipe from the North ABT-W connects to the North ABT-E. The outflow from North ABT-E goes to a sump, where the non-hazardous wastewater can be pumped for final disposition, either in evaporation ponds or into an SDWA Class I permitted non-hazardous UIC well.

The North ABT-W averages 5.5 feet in depth with a surface area of 10,000 square feet. The total volume is approximately 411,500 gallons. The North ABT-W unit is equipped with two (each) 2-horsepower aerators and wastewater retention time (at 80 gpm) is 3.6 days

The North ABT-E (the second of the two in the North area) averages 5.7 feet in depth, with a surface area of 8,440 square feet and a volume of approximately 360,000 gallons. The North ABT-E is equipped with two 2-horsepower aerators and wastewater retention time (at 80 gpm) is 3.1 days

The North and South ABT units have been operated with a minimum freeboard of two feet under normal operating conditions. At the lowest points during operation, the South ABT, North ABT-W and North ABT-E have freeboards of 2.97, 2.54 and 3.08 feet respectively. Influent flow into the South ABT unit is limited by the size of the overflow pipe coming from the API separator/wastewater treatment unit system. Operating personnel monitor pond water levels on a daily basis. The only non-controlled inflow is direct rainfall onto the North and South unit areas.

To manage precipitation, outflow from the ABT unit system is routed to a sump, which has an automatic level control pump. Excess water from process areas generated during a 100-year storm (2.6") is easily handled by this system. The impoundments have 698,000 gallons of additional capacity to the top of the freeboard and the pump can remove 720,000 gallons of water daily. This capacity management total greatly exceeds the 406,000 gallons of water that would be drained from 250,000 square feet of process area. The pump is backed up by two portable diesel backup pumps, which can function in the event of a power

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Section 3
WWT Upgrades

3.1 Level 2 Title

As a result of an EPA Consent Agreement and Final Order (CAFO) dated May 18, 2006, upgrades were made to wastewater treatment operations at the Bloomfield Refinery. This EPA-mandated change at the Bloomfield Refinery was accomplished through construction and operation of a benzene stripper/tank system that will decharacterize all hazardous process wastewater prior to further biological treatment in the ABT impoundments. The tank system is equipped with an additional 10,000 barrel tank to provide surge capacity. As a result, all process wastewater streams, including any contaminated runoff, will be decharacterized prior to discharge into the ABT units for aggressive biological treatment.

3.2 Contingency Plan

In the event of a major failure, the first contingency response is to direct the wastewaters that have not been through the benzene stripping treatment process into the 10,000 barrel surge tank. At a rate of wastewater flow of 80 gpm, that would permit 87.5 hours of flow to be managed without discharge to the ABT units in the event of a benzene stripper failure. During those 87.5 hours for repair work, the benzene strippers in most cases could be fixed and returned to operation. In the event the surge tank capacity may be exceeded, it may be possible to make additional surge tank capacity available, depending on other tank usage at the Bloomfield Refinery. Such evaluation would occur if there was a significant likelihood the strippers could not be restored to working order within the 87.5 hour time frame available for repairs.

Once the benzene strippers are made operational again, wastewaters collected in the surge tank will be appropriately metered back through the wastewater treatment system by being introduced upstream of the API separator consistent with capacity available (in excess of the 80 gpm flow being handled). After the wastewater in the surge tank has been removed, the tank will be inspected to determine if any potentially F037 or F038 listed waste has accumulated. If residual sludge (potentially F037 or F038 listed waste) is present, it will physically removed from the tank via the manway, and characterized and sent off-site for disposal in accordance with all applicable Hazardous Waste regulations.

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Section 4
ABT Unit Closure

4.1 Level 2 Title

This modified Closure Plan is submitted to bring the Bloomfield Refinery into compliance with both the requirements of the EPA CAFO from May 18, 2006 and the requirements of the NMED Order dated July 27, 2007 (also referred to as the Enforceable Document). Because the hazardous characteristic (D018 benzene) will be removed from the wastewater prior to placement in the ABT units (as the result of the wastewater treatment upgrades discussed in Section 3) no further treatment of hazardous waste will occur in the ABT units. Instead, the ABT units will continue to perform their essential function of biologically treating/aerating the non-hazardous wastewater. Such aggressive biological treatment of non-hazardous wastewater in the ABT units will be essential for the operation of the Bloomfield Refinery to assure that F037/F038 formation does not occur at Bloomfield and to achieve water quality required for wastewater disposition pursuant to the Class I UIC permit.

The applicable closure standard for the North and South Aeration Lagoons is 40 CFR §265.111 (Closure Performance Standard), which requires that the owner or operator must close the facility in a manner that:

> (a) Minimizes the need for further maintenance, and
>
> (b) Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere.

4.2 Closure Procedures

When the ABT impoundments became RCRA units as a result of the TC regulations, the Bloomfield Refinery became obligated to prepare and maintain a closure plan for the regulated unit. The previous closure plan for the ABT units was submitted on December 21, 1995 as a portion of the Part B RCRA permit application for this facility.

This modified closure plan coordinates retention of the environmental safeguards of the liners and leachate collection systems for the ABT units with corrective action that includes removal and appropriate disposition of all hazardous wastes, hazardous constituents, decomposition

products, and leachate above that liner system while addressing any historic contamination (below the liners/leachate collection system) under the corrective action portion of the NMED Order (Enforceable Document) and any post-closure monitoring. In order to implement these requirements consistent with the guidance provided by NMED and EPA, the original 1995 closure plan for the ABT Units is modified as set forth below. "Modified closure" is defined as the process by which each aeration lagoon is removed from service, the existing water and sludge is removed and the liner is cleaned, inspected, and, if necessary, repaired before being return to service.

In accordance with guidance from NMED, the South ABT unit will be initially taken through this modified closure process, followed by the North ABT unit once the South ABT unit is placed back into service for the nonhazardous wastewaters coming from the upgraded wastewater treatment system. To accomplish closure of the South ABT Unit, nonhazardous wastewaters will flow directly from the API separator/benzene stripper system to the North ABT units, bypassing the South ABT unit.

After completion of the modified closure of the South ABT unit, the aggressive biological treatment system in the South ABT unit will become operational and the wastewater will be routed from the API separator/benzene stripper system back to the South ABT unit. Following appropriate aggressive biological treatment conducted in accordance with 40 CFR §261.3(b)(2)(i), the treated wastewaters will be then routed from the South ABT unit directly for disposition via evaporation and/or UIC-permitted injection, bypassing the North ABT. After completion of the modified closure for the North ABT unit, it will be restored to service as an additional wastewater treatment unit.

Each ABT unit will be decontaminated following the procedures discussed below. After the flow of decharacterized wastewater to an ABT unit is shut off as part of the closure process, the wastewater in the ABT unit will be pumped back to the WWTU to a location upstream of the API separator. The sludges (including some attendant watery solution entrained with the sludges) in the ABT unit above the liner will be sampled for hazardous characteristics in accordance with 40 CFR Part 261, Subpart C – Characteristics of Hazardous Waste. Sample(s) of the sludge will be collected for waste characterization at a minimum of one sample per each 10 cubic yards. If the sludges do not exhibit any hazardous characteristics, they will be removed from the ABT units by a vacuum truck for appropriate disposal. Additional wastes not amenable to vacuum

removal may be removed through careful shovel or other similar small-scale operations in such a manner as to assure protection of the 100 mil liner. The remaining materials [after vacuum and other removal operations have occurred] and the entire top liner will then be powerwashed with water. This nonhazardous washwater will be placed in the WWTU upstream of the API separator.

If wastes removed from the ABT units exhibit one or more hazardous characteristics, the wastes will be removed and placed into appropriate RCRA tanks/containers for disposal offsite as hazardous waste. All of the equipment used will then be decontaminated with a high pressure steam cleaner and the rinse waters will be collected and placed in the WWTU upstream of the API separator. In addition, the remaining materials [after vacuum and other removal operations have occurred] and the entire top liner then will be powerwashed with water. The liner/residue washwater will be collected in the impoundment and pumped back to the WWTU system for handling through the oil/water separator and benzene strippers, followed by aggressive biological treatment in the other ABT unit still in service. This procedure will be followed even if the washwaters do not exhibit a hazardous characteristic.

As required by NMED, the RCRA liners will be inspected for any damage and repaired if necessary. If there is damage to the 100-mil HDPE top liner, then the upper 100-mil liner will be removed from an area of sufficient size to allow for a thorough inspection of the underlying 60-mil HDPE secondary liner. If the 60-mil liner is damaged, then it will be repaired.

There has not been any indication based on an accumulation of fluids in the underlying (non-RCRA) collection system that the RCRA 60-mil HPDE secondary liner has any damage. However, if the 60-mil liner is damaged, then the underlying (i.e., lowermost) 100-mil HDPE liner will be inspected and may also be repaired although this liner is not required. If the lowermost 100-mil liner is damaged, then the underlying environmental media (e.g., 6" layer of soil with 33% bentonite and native soils) will be investigated to determine if mobile non-aqueous phase liquid (NAPL) hydrocarbons are present immediately beneath the ponds. Only if mobile NAPL is present immediately beneath the ponds, which could migrate to ground water, will remediation of the underlying environmental media be conducted to remove the mobile NAPL. Otherwise, any impacts to the underlying media should not present a threat to human health or the environment due to the fact that multiple overlying liners will prevent any direct contact to or leaching of contaminants.

After all repairs are completed, the impacted leachate collection systems will be flushed with clean water. The leachate collection system consists of a geonet, which is designed to collect any leaks passing through the overlying 100-mil HDPE top liner, drain lines to a sump equipped with a 6" observation pipe, and a 60-mil HDPE secondary liner. Samples of the flush water will be analyzed for hazardous characteristics using methods specified in 40 CFR Part 261 C – Characteristics of Hazardous Waste to determine when flushing has adequately cleaned the collection system. The collected flush water will be pumped back to the WWTU system for handling through the API separator and benzene strippers.

All hazardous waste and waste residues will be removed and properly disposed by conducting the modified closure process and there will be no potential for any post-closure escape of such wastes, thus meeting the Enforceable Document modified closure performance standards in §§265.111(a) and (b) as specified by §265.110(d)(2).

RPS JDC

Section 5
Construction Details

5.1 Level 2 Title

The original Schedule of Closure in the 1995 closure plan provided about 13 weeks for the closure of the ABT units. The closure time frame will be doubled for serial closure of the South ABT unit, followed by North ABT-E and North ABT-W, plus any additional time to repair damage to the liners and address impacts to underlying environmental media.

The schedule for closure of the ABT South ABT unit is as follows:

"Description	Duration
Start of closure [in this case 60 days after NMED plan approval]	
Aeration of impoundments	2 weeks
Testing of treated waste water	1 week
Removal of treated waste water	1 week
Drying of residual solids	4 weeks
Testing of residual solids	1 week
Removal of residual solids	1 week
Washing of impoundments	1 week
Inspection and repair of liners, as necessary	1 week
Flushing of equipment	1 week
Final testing and certification	1 week
Total time required	14 weeks"

The current cost of ABT unit closure[5] is presently estimated at $35,532.00, based on the following:

> "Since these impoundments are undergoing continuous treatment in which the waste stream (a D018 waste because of benzene concentration) is being rendered non-hazardous, closure will simply require:
>
> 1) Stop adding new waste to the treatment stream [in this case the ABT unit];
> 2) Continue treatment until TC characteristic is gone;
> 3) Empty impoundments;

[5]The 1995 Closure Plan estimated closure costs at $20,800 total, based on the same type of analysis used here, but this plan updates those costs to be current for 2007.

4) Analyze sediments for TC characteristics; and
5) Remove and dispose of sediments.

Cost Estimate

	Vigorous aeration with diesel pumpOperator: 168 hours @ $30/hr	
$	5,040	
	Fuel for Pump: 8 gph x $3.00/gal x 168 hrs	4,032
	Testing of treated water	
	Benzene: 15 samples @ $120/sample	1,800
	Testing of residual solids	
	TCLP: 15 samples @ $500/sample	7,500
	Removal of residual solids	
	Labor: 2 workers @ 40 hrs/ea x $30/hr	2,400
	Disposal: 40,000 lbs x $0.20/lb + $2,200 freight	10,200
	Washing of impoundments	
	Mobil wash: 24 hours x $80/hr	1,920
	Flushing of equipment	
	Mobil wash: 8 hrs x $80.hr	640
	Final testing and certification	2,000
	Total Closure Cost (estimate)	**$35,532**