

ATTACHMENT 2

**NAVAJO REFINING COMPANY ARTESIA REFINERY
RCRA PART B POST-CLOSURE PERMIT APPLICATION
APPLICATION SECTIONS 13.0, 15.0, and 16.0**

13.0 CLOSURE/POST-CLOSURE PLAN
[40 CFR 270.14 (b)(13)]

13.1 North Colony Landfarm

13.1.1 Closure Plan

13.1.1.1 Closure Plan Implementation

A Closure Plan for the North Colony Landfarm was submitted with Navajo's original RCRA Permit application. The NCL Closure / Post-Closure Plan was approved by NMEID and incorporated into the facility RCRA Operating Permit (Permit Number NMD048918817-1), issued to Navajo effective August 21, 1989. A copy of the permit notice and relevant pages from the permit directing Navajo to implement the Closure / Post-Closure Plan (paragraphs L.1 & 0.1) is included with this application in Attachment B-4. The approved plan follows the requirements of §264.280 for land treatment units, including placement of a vegetative cover after degradation, transformation or immobilization of hazardous constituents is substantially complete. An updated closure plan that reflects actions already taken is provided in Attachment B-4. Updates to estimated closure costs and financial assurance are addressed in Tab-B, Section 15.2 of this application.

The last application of waste was made to the NCL in September 1990, when the groundwater detection monitoring system detected hazardous constituents in the groundwater and the land treatment demonstration phase of the permit was terminated by NMEID. According to the permit conditions, the NCL reverted to interim status and the operating phase of the permit was never approved. In compliance with the permit, and the requirements of §§ 264.98-.99, Navajo implemented quarterly groundwater compliance monitoring which continues as of the date of this application. Under a schedule negotiated and approved by NMEID, Navajo also implemented a Corrective Action Program (CAP) to comply with §264.100. The RFI Phase II Report required by the CAP was submitted to NMED in November 1997. Additional discussion of the CAP can be found in Tab C, Section 1.8.

Completion of the approved Closure Plan has been delayed pending results of the Corrective Action Program to ensure compatibility with any corrective measures, if necessary. However, certain elements of the closure plan were implemented or have been effectively completed, including:

- submittal, to the Eddy County Clerk, of the certified survey plat required by §264.116 (April, 1989; a copy of the Notice is provided in Attachment B-5);
- operation of the landfarm to the extent necessary to maximize degradation, transformation and immobilization of the final applications of hazardous waste

- constituents (1990-1991; tilling continued approximately six months after last application)
- removal and decontamination of the drum storage pad (1991);
 - maintenance of run-on and run-off control systems (on-going);
 - control of wind dispersion of hazardous wastes (on-going);
 - unsaturated zone monitoring (except soil-pore liquid monitoring) as part of RH activities (1990,1994,1997); and,
 - groundwater compliance monitoring (quarterly since 1991).

The most recent soil and groundwater analytical summaries are provided in Appendices 4 and 5.

The only major closure task which remains is certification of closure.

Navajo shall maintain the vegetative cover. Navajo shall certify in writing that the cover has been established at the NCL by January 31, 2010. The tank and the area surrounding the tank within the secondary containment will serve as cover during the operation of Tank 815 on the facility. In the event that the tank is removed, the area covered by the tank and the secondary containment area shall be vegetated in the same manner as the remainder of the NCL or an alternative cover shall be established if approved by the Secretary.

13.1.1.2 Schedule

Navajo will proceed with implementing the remaining activities for the approved Closure Plan on a schedule to be identified by NMED in the permit. The original schedule and activities in the closure plan will be modified as necessary to reflect actions that have already taken place and the time that has elapsed. Expected actions to complete closure are outlined below:

-
- Submit final closure certification to NMED in compliance with §264.115 (within 60 days of completion of closure).
- Submit certification to NMED that a notation has been placed on the deed to the facility property in compliance with §264.119 (within 60 days of certification of closure).

If an unexpected event occurs during closure which necessitates a change in the closure plan, Navajo will submit to NMED an amended closure plan and request for permit modification, within 60 days of the unexpected event in compliance with §264.112(c)(3).

If it is necessary to submit an amended closure plan during the final closure period, Navajo will also submit a permit modification requesting an extension to the closure period in compliance with §264.113(b).

13.1.2 Post-Closure Care

The Permittee shall conduct Post-closure Care maintenance and monitoring in accordance with 20.4.1.500 (incorporating 40 CFR 264.280), the requirements of Permit Sections 3.2.3.a, 4.6.1, inspection requirements found in Attachment 1, and Permit Attachment 2, Section 3.0 (pp. B-55 through B-60).

13.2 TEL Site

13.2.1 Closure Plan

Closure of the TEL Site, in accordance with a closure plan approved by NMEID (see next subsection), was completed in 1989 and approved by NMEID in a letter from Richard Mitzelfelt, Director - New Mexico Health and Environment Department, on June 20, 1989. Copies of the closure certification, NMEID approval letter and the notice-in-deed are provided in Attachment B-5. The cap used for TEL closure was designed and constructed according to EPA guidance for cap and cover systems. The cap effectiveness was modeled as part of the closure plan and can be found in Attachment B-6 of this application (Appendix D of original closure plan - June 17, 1988).

13.2.2 Post-Closure Plan

Navajo submitted a TEL Closure / Post-Closure Plan to NMEID in April 1988. The TEL Closure Plan was approved by NMEID in a letter from Jack Ellvinger, Chief - NMEID Hazardous Waste Bureau, on June 17, 1988. The original TEL Post-Closure Plan and the NMEID approval letter are included with this application as Attachment B-6. The June 20, 1989, letter from NMED which approved the TEL closure (Attachment B-5) instructed Navajo to "implement your post-closure care plan until the EID issues a post-closure permit".

Navajo has been implementing provisions of the April 1988 TEL Post-Closure Plan since June 1989. The unit is fenced, has its own irrigation system, is covered with grass and is mowed as necessary. At the time of closure, compliance monitoring had been ordered for the TEL Site and continues quarterly at the time of this application as a condition of Post-Closure care. Groundwater monitoring requirements are presented in Tab C, Section 2.0. Monitoring results are provided in Appendix 5.

In the last 8 years, the product level in the monitor wells around this unit has dropped from 2 feet to a sheen. This is attributed to an aggressive product recovery system in place throughout the refinery, but most specifically to a recovery trench just east of the TEL. The source of the free product is believed to be two diesel storage tanks that were at one time located just west of the TEL and that had been identified as leaking when they were removed. Laboratory analysis has shown the recovered product to be diesel. Given the characteristics of wastes placed on the TEL, it is most likely the source of the free product was the diesel tanks, not the TEL.

Updates to estimated post-closure care costs and financial assurance are addressed in Section 16.3 of this application. Post-Closure care has been implemented for 12 years, since closure in June 1989, so financial assurance is calculated based on 18 years of remaining post-closure care.

13.3 Evaporation Ponds

13.3.1 Closure Plan

As regulated units defined in 40 CFR 264.90 (a)(2), Evaporation Ponds 2-6 are subject to the corrective action requirements of § 264.100 as presented in Tab C, Section 3.0 (page C-13). Accordingly, a closure plan (corrective measure plan) addressing surface soils for Ponds 2-6 was developed and submitted to EPA and NMED in 1996 and is discussed in Tab C, Section 3.8 (page C-16) of this application. Information can also be located in Appendix 1 of this application (*Executive Summary*, Section V, page 68). EPA approved this closure plan and in April, 1997, EPA Region VI (Samuel Coleman, Director - Compliance Assurance and Enforcement Division) wrote a letter to NMED recommending acceptance of the plan. A copy of the letter is included in Attachment B-7.

Navajo will submit a workplan for additional investigation of Evaporation Ponds 2-6 and a revised closure/post-closure plan on a schedule to be identified in the post-closure permit. The revised closure plan may contain a provision for incorporating a Corrective Action Management Unit with the Evaporation Ponds 2-6 unit.

Requirements for Post-Closure Care (Part 264, Subpart G), and Releases From Solid Waste Management Units (Part 264, Subpart F), are addressed in the following Section 13.3.2 and Tab-C, Section 3.0 respectively.

13.3.2 Post-Closure Plan

The permitting requirements of 40 CFR 270.1(c) require that owners or operators of closed surface impoundments that received hazardous waste after July 26, 1982, must have a post -closure permit that addresses applicable Part 264 Groundwater Monitoring (264.91-.99), Corrective Action (264.100) and Post-Closure Care (264.117-120) requirements. 40 CFR 264.90, Subpart F - Releases from Solid Waste Management Units, identifies surface impoundments that received hazardous waste after July 26, 1982, as a special type of solid waste management unit, referred to as a "regulated unit", subject to the groundwater monitoring and corrective action program provisions of §264.91 through 264.100, in lieu of Corrective Action for Solid Waste Management Units in §264.101 The post-closure requirements of 264.117 also encompass the provisions of 264.91-100 for groundwater monitoring and corrective action.

Evaporation Ponds 2-6 received hazardous waste after July 26, 1982, and are therefore "regulated units" subject to post-closure requirements including a post closure plan. As part of corrective action and other enforcement activities, Navajo has prepared a Post-Closure Plan included as Attachment B-7 to this application. This Post-Closure Plan will be updated on a schedule to be identified by NMED in the post-closure permit.

15.0 COST ESTIMATE AND FINANCIAL ASSURANCE FOR CLOSURE

[40 CFR 270.14 (b)(15)]

15.1 General

The North Colony Landfarm is the only hazardous waste management unit remaining to be closed subject to the permitting requirement of 40 CFR 270.14(b)(15), which requires a cost estimate for closing the facility in accordance with the requirements of §§264.111 through 264.115 and a demonstration of financial assurance in accordance with §264.142-.143. The cost estimate and financial assurance for closure of the North Colony Landfarm is discussed in Sections 15.2 and 15.3 below.

As regulated units defined in §264.90, Evaporation Ponds 2-6 are being addressed under a §264.100 Corrective Action Program (corrective action for regulated units). That section has no specific financial responsibility requirements, however, according to §264.90(a)(2), the financial responsibility requirements of §264.101 apply to regulated units. Cost estimates and financial assurance for potential corrective measures for Ponds 2-6 were prepared as part of the 1996 Closure Plan for Ponds 2-6 discussed in Tab C, Section 3.8 (also Appendix 1, page 69). These estimates have been updated and are included in Table B-8-6 of Attachment B-8, Financial Assurance for Closure, Post-Closure and Corrective Action.

Three Mile Ditch and Evaporation Pond 1 are considered to be a solid waste management unit (SWMU). This unit is being addressed under a §264.101 Corrective Action Plan (corrective action for solid waste management units) and the applicable financial requirements of §264.101(b) and (c). Potential corrective measures for Three Mile Ditch and Evaporation Pond 1 are therefore presented in Tab-D, Information Requirements for Solid Waste Management Units, Section 3.0 and 4.0. Corrective measure costs for Three Mile Ditch have been updated and are included in Table B-8-5 of Attachment B-8, Financial Assurance for Closure, Post-Closure and Corrective Action. Because Evaporation Pond 1 is co-located with Evaporation Ponds 2-6 and will undergo similar corrective actions, corrective measure costs for these units have been combined and are presented in Table B-8-6 of Attachment B-8.

15.2 Cost Estimate for Closure of North Colony Landfarm

The cost estimate for closure of the North Colony Landfarm is provided in Table B-1 on page B-47. The cost can also be found in Section 2.4 of the Closure and Post-Closure Plan for North Colony Landfarm (Attachment B-4, Table 1).

The remaining closure costs for the NCL are estimated at \$22,256 based on hiring a third party to close the facility. This estimate will be updated annually for inflation, within 30 days after the close of Navajo's fiscal year, by either recalculating the cost estimate in current dollars or using an inflation factor as specified in §264.142(b). Navajo's fiscal year currently ends July 31. Closure costs will be updated in August of each year unless the

fiscal year ending date changes in which case the update will be made within 30 days of the next fiscal year end close.

15.3 Financial Assurance for Closure of North Colony Landfarm

Financial assurance for closure requirements is provided through a corporate guarantee in accordance with 40 CFR Part 264 Subpart H by Holly Corporation on behalf of its subsidiary, Navajo Refining Company. The most recent Financial Assurance certification for the Navajo facility is provided in Attachment B-8. The corporate guarantee will be updated annually and submitted to NMED within 90 days after the close of the fiscal year. Navajo's fiscal year currently ends July 31. Updated financial assurance certification will be submitted by the end of October of each year unless the fiscal year ending date changes in which case the update will be made within 90 days of the next fiscal year end close.

TABLE B-1

ESTIMATED CLOSURE COSTS FOR NORTH COLONY LANDFARM				
Activity	Unit	Quantity	Cost/Unit	Total Cost

Establish Vegetative Cover				
Obtain Soil Samples (technician, includes travel time)	Hrs	12	\$50/hr	\$600
Test Soil (pH, nutrients, organic matter)	Samples	8	\$150/sample	\$1,200
Establish grade	SY	17818	\$0.19/SY	\$3,385
Fertilize (3 times, 800 lbs/acre)	Acres	3.68	\$78.45/acre	\$870
Apply lime (3 times, 800 lbs/acre)	Acres	3.68	\$95.14/acre	\$1,050
Initial seeding (mechanical seeding, seed, mulch and water)	Acres	3.68	\$2,033/acre	\$7,481
Water (5 times, by truck)	Acres	3.68	\$54.19/acre	\$997
Survey (2-person crew)	Day	1	\$650	\$650
Subtotal Task				\$16,233

Project Management and Reporting				
Certify closure	hrs	8	\$125/hr	\$1,000
Notice in deed	hrs	8	\$125/hr	\$1,000
Travel Time (2 trips)	hrs	8	\$125/hr	\$1,000
Travel cost	Trip	2	\$500	\$1,000
Project management and subcontractor markup	10% of total cost			\$2,023
Subtotal Task				\$6,023

PROJECT TOTAL COST	\$22,256
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NOTES:

Costs last updated: May, 2001

Costs based on hiring third party for all activities.

Cost estimates based on data from R.S. Means Environmental Unit Cost Data (2000)

NAVAJO REFINING COMPANY ARTESIA, NEW MEXICO REFINERY

PART B APPLICATION

ATTACHMENT B-4

NORTH COLONY LANDFARM CLOSURE / POST-CLOSURE PLAN

- » Revised NCL Closure and Post-Closure Plan (March 2001)
- » Original NCL Closure & Post-Closure Plan
- » Authorization for 1989 Hazardous Waste Facility Permit with pages documenting that Navajo was to implement closure/post closure according to the plan submitted with the application and included in the permit

NAVAJO REFINING COMPANY
NORTH COLONY LANDFARM
CLOSURE & POST CLOSURE PLAN

March 2001

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NORTH COLONY LANDFARM CLOSURE & POST CLOSURE PLAN
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NORTH COLONY LANDFARM CLOSURE & POST-CLOSURE PLAN

1.0 INTRODUCTION

This Closure Plan for the North Colony Landfarm, hereafter known as NCL, satisfies the requirements of New Mexico's Hazardous Waste Regulations. A Closure/Post-Closure Plan for the NCL was originally prepared and incorporated into Navajo's 1989 RCRA Landfarm Treatment Demonstration permit. That original closure /post-closure plan is attached at the end of this revised plan.

Portions of this closure plan have been completed as described. Uncompleted portions of this closure plan have been delayed due to an order to cease landfarm operations issued by the NMED (then NMEID) in 1990 as a result of groundwater contamination discovered during routine detection monitoring. This closure plan incorporates applicable portions of the original closure plan and details modifications necessary due to the manner in which the facility ceased operations that caused certain procedures of the original closure plan to be irrelevant.

2.0 CLOSURE PLAN

The closure plan consists of three phases:

- Decontamination of the general facility and drum storage area
- In-place treatment of final waste application
- Establishment of a vegetative cover

2.1 Completed Phases of the Closure Plan

2.1.1 Decontamination and Removal of the Drum Storage Pad

All equipment used in conjunction with operation of the landfarm was drained, washed with a suitable detergent, and triple rinsed. The rinsate volume was contained and transported to the NCL for application. Once all loads of the hazardous wastes had been applied to the landfarm, the application equipment and any other equipment used on the NCL was steam cleaned over the surface of the NCL and allowed to drain over the surface of the NCL.

The drum storage area was located within the fenced boundaries of the North Colony Landfarm. It consisted of approximately 11,300 square feet of concrete pad and was constructed in 1980. The drum storage area was used for the accumulation of empty drums generated at the refinery prior to being shipped off-site within 90 days for cleaning and reclamation.

Although not a hazardous waste management unit, the disposition of the storage area was included in the original closure plan for North Colony Landfarm and has been implemented. When landfarm operations were discontinued in September 1990, use of the Drum Storage Area was discontinued shortly thereafter. All drums were removed, the concrete pad steam cleaned and the concrete removed. There are no remaining actions to be taken regarding the Drum Storage Area.

2.1.2 In-Place Treatment of Wastes

Final waste volume was applied in September 1990. In-place treatment of the wastes was conducted by tilling and application of any required soil amendments for a period of 90 to 150 days. However, installation of the final cover was delayed indefinitely as a result of the multiple phase RCRA Facility Investigation conducted at the facility.

Procedures were employed to prevent and/or monitor the migration of hazardous constituents from the NCL to adjacent soils and groundwater. As during the operating life of the facility, groundwater monitoring has continually been conducted throughout the closure implementation. During the closure process, the groundwater has been monitored on a quarterly basis and at the request of the NMED, the results of groundwater monitoring have been reported at least annually.

2.1.3 Control of Release of Contaminated Run-Off

A dike constructed surrounding the NCL was installed to control the release of contaminated runoff from the NCL. The dike was designed to contain potentially contaminated water that periodically accumulated at the surface of the NCL from flowing into contiguous areas, preventing the potential eventual migration to groundwater. The Permittee must maintain the berm surrounding the NCL in accordance with Permit Section 3.2.3.a.n.

During the course of the closure since 1990, potentially contaminated surface run-off has continued to be controlled by the existing dike around the perimeter of the NCL. The dike was constructed to a minimum height of 3-5 feet above the surface of the NCL and is capable of containing approximately 3.5 times the annual rainfall for the area (13 inches) in volume assuming an average dike height of 3.5 feet and approximately 4 acres of surface area based on an estimated 13-inch rainfall accumulation total over the facility produced by a 24-hour, 25-year storm event. The integrity of the dike is routinely inspected by the closure coordinator and any eroded areas are promptly repaired in order to maintain the capacity of the impounded area.

2.1.5 Compliance With Food-Chain Crop Restrictions

Navajo has not allowed the cultivation of food chain crops on the during the closure period. A notice of such restriction of use of the property will be filed with the Title Deed maintained in the official land owner records of the county when final closure is certified.

2.1.6 Soil Core Monitoring

Soil core monitoring was part of the original closure plan; however, due to termination of the landfarm treatment demonstration, soil core monitoring was conducted as a part of the RFI at the facility and was eliminated from this closure plan revision. Results of soil core monitoring conducted in 1990-1994 can be found in Appendix 4 of the Navajo Post-Closure Permit Application.

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2.2.2 Certification of Closure

Navajo will submit certification of closure to the NMED within 60 days of completion of all activities necessary to close the North Colony Landfarm (i.e. - the vegetative cover has been planted). The certification will state that the NCL has been closed in accordance with the approved closure plan. The certification must be sent by registered mail and signed by an independent registered professional engineer or an independent qualified soil scientist.

2.2.3 Survey and Notice to Local Land Authority

A survey plat performed by a professional land surveyor will indicate the location and dimensions of the NCL with respect to permanently surveyed benchmarks. The survey plat will contain a note, prominently displayed, stating that disturbance of the closed hazardous waste facility is restricted.

Navajo will record a notation in the deed to the North Colony Landfarm property that:

- The land has been used to manage hazardous waste;
- Its use is restricted under 206.D.2.g.(3); and,
- The survey plat and record of waste disposal has been filed with the local land use authority and the NMED.

Navajo will submit to the NMED a signed certification specifying that the notation in the deed has been recorded, together with a copy of the document in which the notation has been placed.

2.3 Schedule

2.4 Closure Cost Estimate

An estimate of the costs to perform the remaining closure activities is provided in Table 1 at the end of the plan.

3.0 POST-CLOSURE PLAN

3.1 Requirements for Post Closure Activities

3.1.1 Groundwater Monitoring

A compliance monitoring program was initiated for NCL in 1989-1990 following detection of hazardous constituents in the groundwater. The Compliance Monitoring Program, which meets the requirements of 40 CFR 264.99, is a part of the Groundwater Monitoring Plan of the RCRA Permit issued in 1989 and can be found in the Post-Closure Permit Application (Section 3 of Attachment C-1). Quarterly compliance monitoring continues as of the date of this application as part of the Corrective Action Program implemented under 40 CFR 264.100(d). Results of the quarterly monitoring are reported annually to NMED and NMOCD. Reports for calendar years 1999 and 2000 are included in Appendix 5 of the Post-Closure Permit Application.

Based on discussions with NMED regarding future post-closure activities, Navajo shall monitor at the locations, frequencies, and for the chemical analyses established in the Facility Wide Groundwater Monitoring Work Plan. The results shall be included in the Annual Groundwater Monitoring Report. .

3.1.2 Maintenance of Access Restrictions

To ensure that the surface of the NCL remains undisturbed during post closure, a 6 foot chain link fence topped with 3 strands of barbed wire will be maintained along the northern and western boundaries to prevent access from outside the refinery property. The fence along the southern boundary, the eastern 6-foot high berm, and warning signs will be used to limit access to authorized personnel from within the facility boundaries.

3.1.3 Inspection and Maintenance Procedures

During post-closure care duration, the Closure Coordinator will supervise planned inspection and maintenance activities. The inspection frequencies and maintenance procedures for these activities are listed below:

Final cover integrity shall be inspected in accordance with the requirements found in Permit Section 3.2.3.a during post-closure care. The vegetative cover shall be mowed as necessary to keep down weed and brush species. Annual fertilizations or liming if necessary, will promote the desirable grasses over those that offer less resistance to surface erosion. Judicious use of herbicides and pesticides may be necessary to protect the vegetative cover from competing vegetation and insects. Bi-monthly irrigation may be necessary to bring soil moisture content up to a minimum of 50% of the available soil water.

An inspection list shall include the following:

- Surface erosion
- Need for fertilization, mowing, or irrigation
- Need for herbicides and pesticides
- Burrowing animals destroying large surface areas of vegetation

Any surface erosion shall be immediately repaired and restored to pre-damaged conditions. If erosional effects persistent, re-grading of the land surface shall be conducted to eliminate these effects.

The run-on/run-off control system consisting of the NCL perimeter dike and the dike and berm around Tank 815 shall be inspected monthly.

The following items should be inspected:

- Width of the dike base and crown
- Height of dike above exterior ground level
- Condition of vegetative growth to secure dike from erosion
- Presence of burrowing animals

Specifically, the run-on/run-off control system inspection must document any indications of erosion that could reduce the dike's capacity to control run-on/run-off. If erosion occurs, the dike must be restored to its original specification.

The security fence that previously surrounded the NCL was partially removed during construction of Tank 815. The refinery boundary fence is located adjacent to the northern and western boundaries of the NCL. A 3-strand barbed wire fence is located along the southern boundary of the NCL. There is no fence located on the eastern side of the NCL, however the NCL is located within the overall refinery fenced enclosure. Existing fencing adjacent to the NCL and warning signs in English and Spanish shall be inspected monthly.

The following items shall be inspected:

- Integrity of chain link fence
- Warning signs

Specifically, the fence inspection shall note and document indications of damage, vandalism, or mechanical failure. Additionally, check that signs are legible and securely fastened.

All NCL groundwater monitoring wells (NCL-32, NCL-33, NCL-34, NCL-44, MW-53, MW-54A, MW-55 MW-56, and MW-108) will be inspected at scheduled sampling events as outlined in the Facility Wide Groundwater Monitoring Plan. .

The following items shall be inspected:

- Surface casing and lockable lid
- Concrete pad around surface casing
- Indications of mechanical integrity of tubing
- Indications of standing water on vegetative growth

Specifically, the monitoring well inspection shall document ; damage to surface casing that would prevent sampling or compromise security, mechanical function of lock and indications of vandalism, weathering of concrete pad into fragments or subsidence of well structure, subsidence of tubing or indications of physical mechanical failure or elevated levels of PVC constituents in groundwater samples, standing water that can migrate into groundwater by seeping down the outside of the casing or vegetative growth, such as bushes or small trees whose root systems could penetrate the seal around casing in the well bore.

If replacement of a well becomes necessary, applicable regulatory guidelines on RCRA-approved well installation will be consulted. It may also be necessary to apply for a Class I Permit Modification.

An example inspection checklist is provided in Figure 1 at the end of this plan.

3.2 Post-Closure Property Use

Navajo will not allow post-closure use of the NCL that will disturb the integrity of the final cover, run-on/run-off containment system, security system, or the function of the sites monitoring systems unless the Secretary approves of the use.

If such post-closure use becomes necessary, Navajo may request modification of its post-closure plan in accordance with the provisions of 40 CFR 270.42 and 40 CFR 264.117(c) as appropriate, provided that the modification or use meets either of the following conditions:

- It is necessary to the proposed use of the property and will not increase the potential hazard to human health or the environment; or
- It is necessary to reduce a threat to human health or the environment.

3.3 Length of Post-Closure Period

The post-closure period identified in the original RCRA Permit for NCL was 30 years from the date of closure. Navajo essentially commenced post-closure care in 1991 when most closure activities, except placement of the vegetative cover, were completed and the RFI was

initiated. Post-closure activities have been underway for 10 years. Navajo requests that the remaining post-closure period be initially set at 20 years. The NMED will identify the remaining post-closure period and schedule in the post-closure permit.

3.4 Post Closure Contact

The individual holding the position of Environmental Coordinator, or its successor title will be the point of contact:

Environmental Coordinator
Navajo Refining P.O.
Drawer 159 501 East Main
Street Artesia, NM 88210
(505) 748-3311

3.5 Amendment of Post-Closure Plan

Navajo will amend the post-closure plan whenever changes in facility design or operating plans affect post-closure plans. This includes events that occur during partial or final closure.

Navajo will amend the post-closure plan at least 60 days prior to the proposed change or no later than 60 days after the unexpected event that affects the post-closure plan.

This includes any changes caused by amendments to the closure plan.

3.6 Certification of Post-Closure

Within 60 days after completion of post-closure care, Navajo will submit a letter of certification by registered mail to the Director.

The letter of certification will state that the post-closure care was performed in accordance with the approved post-closure plan. The signatures of a duly authorized representative of Navajo and an independent certified registered professional engineer will appear on the letter of certification. [20.4.1.500 NMAC incorporating 40 CRF § 264.120]

3.7 Post-Closure Cost Estimate

The Post-Closure Plan Cost Estimate is presented in Table 2 at the end of this plan. Since post-closure activities have been underway for 10 years, Navajo is providing a cost estimate for 20 years of post-closure care and requests that that the remaining post-closure care period be initially set at 20 years.

3.8 Revision of Post-Closure Cost Estimate

Navajo will revise the post-closure cost estimates within 30 days after the Director has approved the request to modify the post-closure plan, if the change in the post-closure plan results in an increase to the cost of the post-closure care.

TABLE 1

ESTIMATED CLOSURE COSTS FOR NORTH COLONY LANDFARM				
Activity	Unit	Quantity	Cost/Unit	Total Cost

Establish Vegetative Cover				
Obtain Soil Samples (technician, includes travel time)	Hrs	12	\$50/hr	\$600
Test Soil (pH, nutrients, organic matter)	Samples	8	\$150/sample	\$1,200
Establish grade	SY	17818	\$0.19/SY	\$3,385
Fertilize (3 times, 800 lbs/acre)	Acres	3.68	\$78.45/acre	\$870
Apply lime (3 times, 800 lbs/acre)	Acres	3.68	\$95.14/acre	\$1,050
Initial seeding (mechanical seeding, seed, mulch and water)	Acres	3.68	\$2,033/acre	\$7,481
Water (5 times, by truck)	Acres	3.68	\$54.19/acre	\$997
Survey (2-person crew)	Day	1	\$650	\$650
Subtotal Task				\$16,233

Project Management and Reporting				
Certify closure	hrs	8	\$125/hr	\$1,000
Notice in deed	hrs	8	\$125/hr	\$1,000
Travel Time (2 trips)	hrs	8	\$125/hr	\$1,000
Travel cost	Trip	2	\$500	\$1,000
Project management and subcontractor markup	10% of total cost			\$2,023
Subtotal Task				\$6,023

PROJECT TOTAL COST	\$22,256
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NOTES:
 Costs last updated: May, 2001
 Costs based on hiring third party for all activities.
 Cost estimates based on data from R.S. Means Environmental Unit Cost Data (2000)

TABLE 2

ESTIMATED RECURRING ANNUAL POST-CLOSURE COSTS FOR NORTH COLONY LANDFARM				
Activity	Unit	Quantity	Cost/Unit	Total Cost
Semiannual inspection (2/yr)	hours	4 hrs/insp	\$50/hr	\$400/year
Security maintenance	annual	1	\$250/yr	\$250/year
Dike maintenance	annual	1	\$250/yr	\$250/year
Monitoring well mtce	wells	8 wells/yr	\$150/well	\$1,200/year
Mowing (2/yr)	Acre	3.68 acre	\$27.04/acre	\$200/year
Fertilize (annually)	Acre	3.68 acre	\$78.44/acre	\$288/year
Semiannual groundwater Sampling; (8 wells)	hours	1 tech + 1 geologist 16 hours/event 2 events/yr	\$45/hr-tech \$85/hr-geologist	\$4,160/year
Analysis; ground water (VOC, SVOC, DRO, RCRA VIII metals)	samples	9 samples/event (includes QA)	VOC-\$205 SVOC-\$380 DRO-\$85 Metals-\$155 Total-\$825	\$14,850/ year
Travel time (2/yr)	Hours	1 tech + 1 geologist 8 hrs/event	\$65/hr avg	\$2,080/year
Travel costs	Trip	2/yr	\$500/trip	\$1,000/year
Reporting(2/yr)	hours	16 hrs/report	\$85/hr	\$2,720/year
Project management and subcontractor markup	10% of total cost			\$2,740/year
TOTAL ANNUAL COST				\$30,138
120 YEARS ANNUAL COST				\$602,760

ESTIMATED ONE-TIME POST-CLOSURE COSTS TOR NOR 111 COLONY LANDFARM				
Activity	Unit	Quantity	Cost/Unit	Total Cost
Replace monitoring wells once during 30 years	Well installation	8 wells	\$3,500	\$28,000
Replace fence once during 30 years	Linear foot (LF)	1600 LF 7' chain link	\$26.80/LF	\$42,880
TOTAL ONE TIME COSTS				\$70,800
TOTAL 20 YEAR POST-CLOSURE COST				\$673,560

NOTE:

Costs last updated: May, 2001

Costs based on hiring third party for all activities.

Cost estimates based on data from R.S. Means Environmental Unit Cost Data (2000)

Last waste placed on NCL in 1990. Under Post-Closure for 10 years, since 1991.

FIGURE 1 INSPECTION LOG: NORTH COLONY LANDFARM

At least semiannually and after major storm events the following should be inspected, observations recorded, and repairs made if necessary

Dikes:

1. Any surface erosion? _____ ; _____
2. Is the dike height approximately 3 feet all around the western portion of the NCL? _____
3. Any presence of burrowing animals? _____
4. Any deep rooted vegetation (trees, bushes) that need removed

Tank 815

1. Evidence of spills, leaks, deterioration, overfills or accumulation within the containment area ?
_____ ; _____
2. Is the dike height approximately 6 feet all around the exterior? _____
3. Any presence of burrowing animals? _____
4. Any evidence of leakage from above-ground piping or piping that penetrates through the earthen berm on the south side of the tank?

Security and Control:

1. Is the integrity of the fence intact? _____
2. Are the warning signs in place (any missing) and legible? _____
3. Any signs of vandalism or prohibited trespass _____

Monitor Wells: (also inspect at each monitoring event)

1. Any damage to surface casing that would prevent sampling? _____
2. Any indication of vandalism? _____
3. Any weathering of concrete pad? _____
4. Any evidence of standing water or subsidence of well structure? _____
5. Are wells locked and locks/caps in good condition? _____

Final Vegetative Cover (when placed)

1. Any evidence of standing water? _____
2. Any erosion or evidence of burrowing animals? _____
3. Is vegetation distressed? Any areas that require re-seeding? _____
4. Does grass need mowing, watering, fertilization? _____

General:

1. Any standing water on the landfarm? _____
2. Does the landfarm need to be tilled? _____

3. Does the landfarm need to be watered (evidence of wind erosion extreme dusting)? _____

4. Other observations: _____

Work Memo Number: _____

Date Issued: _____ Date Completed: _____.

Inspection Date: _____ Inspection Signature: _____

NOTE: this inspection log and any related work orders to be retained for at least three years from inspection date.