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Chapter I

RESOURCE CONSERVATION AND RECOVERY ACT PART B PERMIT APPLICATION

Navajo Refining Company
Artesia, New Mexico

Submitted To
U. S. Environmental Protection Agency
Dallas, Texas

Submitted By
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TABLE OF CONTENTS

Contingency Plan

List of Tables

List of Figures

Contingency Plan

I. Purpose

The contingency plan satisfies the requirements of Subpart D, Contingency Plan and Emergency Procedures, specifically 264.50 through 264.56 and 264.227. Navajo has established guidelines for the orderly handling and reporting of emergency situations which may occur or could foreseeably develop. The plan is designed to minimize hazards to human health or the environment from fires, explosions or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water. The provisions of this plan will be carried out immediately whenever there is a fire, explosion or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

II. Basic Considerations

A major emergency is defined as any explosion, fire, material release or natural disaster (hurricane, tornado, flood, etc.) which has or threatens to destroy plant property, impair plant operations or result in a discharge of waste materials into the environment and is beyond the capability of on-duty personnel to control. A major emergency may originate from on-plant activity such as spills, fires, explosions, contractor work, chemical reaction, chemical release, etc., or off-plant activity such as an aircraft crash on plant property, fire from neighboring property, or natural disaster. A major emergency may occur at any time. For this reason, pre-planned drills are conducted periodically for each shift so that personnel are thoroughly familiar with the procedures involved. The first consideration must always be the protection and sustaining of human life. Consequently, evacuating injured from the emergency zone to a safe area and securing medical treatment must always be a priority action. The same high priority must be given to protecting occupants in the

areas surrounding the plant if any emergency occurs onsite which would threaten them.

III. Coordination with Local Authorities

A. Arrangements

The provisions of 264.37 require Navajo to make appropriate arrangements with local authorities considering the type of wastes handled and the potential need for services. The police, fire department and emergency response teams should be familiar with the layout of the Navajo facilities, the locations of areas within the plant where personnel normally work, the location of plant entrances and internal access roads and possible evacuation as shown in Figure I-7-1. Local authorities having primary emergency response roles and those offering support and services include:

Local Authorities	Primary Responsibility	Support Services
Police Departments	State Police 746-6113	City of Artesia 746-2704 Eddy County Sheriff 887-7551
Fire Departments	Artesia Volunteer 746-9562	
Emergency Response	National Response Center (800)424-8802	Red Cross 746-2252 New Mexico Environmental Improvement Division, Hazardous Waste Hotline 827-9329

The State Police, the National Response Center and the New Mexico Environmental Improvement Division are familiar with general properties of hazardous wastes. The knowledge gained through their training programs together with Navajo's knowledge of the properties of oily refinery wastes should provide the information necessary to make informed decisions regarding the nature and associated hazards of waste materials.

Artesia General Hospital may provide emergency medical treatment. Navajo has made arrangments with the hospital to familarize them with the properties of hazardous wastes handled onsite and the types of injuries which would result from energency situations, such as fires or explosions.

B. Evacuation Plan

An evauation plan has been developed for the Navajo Refinery to effect safe and efficient removal of all onsite personnel from the facility. This plan consists of detailed procedures which will be implemented when, based on the observations of the Emergency Coordinator, evacuation is necessary to prevent undue exposure of personnel to hazardous or potentially hazardous circumstances. Such established procedures will be followed as closely as possible, however in specific emergency situations, the Emergency Coordinator may deviate from these procedures to provide a more effective plan for bringing the situation under control.

The facility employs a warning system with an alarm signal to initiate evacuation of all refinery areas. The central alarm system, activated from the laboratory or the control rooms, sounds an alarm in the control rooms and office buildings. A fire siren, activated from the laboratory or for Thermafor Catalytic Cracking Unit (TCC), Fluid Catalytic Cracking Unit (FCC), and Alkylation/Crude Control Rooms, is audible throughout the Navajo Plant and adjacent areas. The evacuation signal consists of sounding the fire siren. The alarm system may also be used to summon aid in other emergency situations. Selection of the appropriate alarm signal in accordance with the security of the emergency situation is left to the discretion of the Emergency Coordinator.

The planned routes for evacuation and emergency vehicles are shown in Figure I-7-1. Sufficient aisle space is maintained at the Navajo Plant to allow unobstructed movement of personnel, fire protection equipment and decontamination equipment to any area of the Navajo Plant.

Once the signal for plant evacuation is activated, no further entry of visitors, contractors, or trucks will be permitted. All unnecessary vehicle traffic within the plant will cease to allow safe exit of personnel and movement of emergency equipment. Personnel, visitors, and contractors will leave the plant immediately. No persons shall remain or reenter the location unless specifically authorized by the person or persons calling for the evacuation. In allowing this, the person in charge assumes responsibility for those persons within the perimeter. Those within the fenced area will normally only include fire brigade personnel or emergency teams.

All persons will be accounted for by their immediate supervisors. Supervisors will designate certain gates as the safest exists for his employees and will also choose an alternate exit if the first choice is inaccessible. To assist in this endeavor, the Emergency Coordinator will use the internal telephone system to call the area supervisor, to inform him of the nature of the emergency. During exit, the supervisor should try to keep his group together. Immediately upon exiting the plant, the highest ranking supervisor will prepare a list of all personnel present. All other personnel who have persons reporting to them should report immediately to the front gate for final accounting. Upon completion of the employee list, the supervisor in charge will hand-carry the list to the Emergency Coordinator. All other personnel will remain at the gate area. Contract personnel should also be listed with the name of their company. Contract foremen should report to the front gate. The names of fire brigade and/or other emergency team members involved in emergency response will be reported, in writing, to the front gate by designated response team personnel. A final tally of persons will be made by the Emergency Coordinator. No attempt to find persons not accounted for will involve endangering lives of others by reentry into emergency areas.

Reentry into the fenced area will be made only after clearance is given by the Emergency Coordinator. At his direction, a signal or other notification will be given

for reentry into the plant. In all questions of accountability, immediate supervisors will be held responsible for those persons reporting to them. Visitors will be the responsibility of those employees they are seeing. Contractors are the responsibility of those persons administering the individual contracts. The guards will aid in accounting for visitors, contractors, and truckers by reference to the sign-in sheets. Drills are held to practice all of these procedures and are treated with the same seriousness as an actual emergency.

IV. Emergency Organization

Emergency organization staffing positions include the Emergency Coordinator, North Emergency Supervisor and South Emergency Supervisor. The personnel assigned to emergency staff positions have been identified by job description. A primary and at least one alternate coordinator for each function has been assigned as shown in Table 1-7-1. Emergency coordinators have the ultimate responsibility to implement the contingency plan. Designated emergency coordinators are qualified and competent Navajo employees who are familiar with the Navajo facility operations, waste handling and management practices, locations of waste treatment, storage and disposal areas and recordkeeping requirements. Furthermore, persons designated as emergency coordinators have the authority to commit the resources necessary to implement the contingency plan.

A. General Responsibilities of Emergency Staff

1. Emergency Coordinator

The Emergency Coordinator organizes, coordinates and directs all emergency control activities prior to, during and after an emergency until relatively normal conditions are restored. He is usually stationed at a central location where he maintains control and coordinates activities between groups.

2. North Emergency Supervisor

The North Emergency Supervisor is responsible for coordinating all emergency response activities in the north division of the refinery. If an emergency situation

Table I-7-1

Emergency Organization Staffing

Emergency Coordinator:	David G. Griffin Superintendent of Environmental Affairs and Quality Control 3302 Chiquita Lane Roswell, New Mexico (505) 625-2700
North Emergency Supervisor:	Clarence Juarez North Division Foreman Route 1, Box 196F Artesia, New Mexico 88210 (505) 748-3163
South Emergency Supervisor:	James Bradley South Division Foreman Route 1, Box 202 H Artesia, New Mexico 88210 (505) 746-4759

arises in the north division of the plant, he is responsible for supervising fire fighting, rescue activities, plant security, operation of the communications and alarm systems, detection and assessment of special chemical hazards, and decontamination of personnel and equipment, if required. The North Emergency Supervisor is generally the North Division foreman. He is usually stationed at the scene of the emergency reporting directly to the Emergency Coordinator.

3. South Emergency Supervisor

The South Emergency Supervisor is responsible for coordinating all emergency response activities in the south division of the refinery. If an emergency situation arises in the south division of the plant, he is responsible for supervising fire fighting, rescue activities, plant security, operation of the communications and alarm systems, detection and assessment of special chemical hazards and decontamination of personnel and equipment, if required. The South Emergency Supervisor is generally the South Division foreman. He is usually stationed at the scene of the emergency, reporting directly to the Emergency Coordinator.

B. Specific Responsibilities of Emergency Coordinator

Whenever there is an imminent or actual emergency situation, the Emergency Coordinator (or his designee when the Emergency Coordinator is on call) must immediately: 1) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and 2) Notify appropriate State or local agencies with designated response roles if their help is needed.

Whenever there is a release, fire, or explosion, the Emergency Coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials. He may do this by observation, review of the Waste Analyses or known chemical properties.

Concurrently, the Emergency Coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This

assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat induced explosions).

If the Emergency Coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment outside the facility, he must report his findings as follows: 1) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify the Artesia Police Department (746-2404). He must be available to help appropriate officials decide whether local areas should be evacuated; and 2) He must inform the State Police (746-6113), the National Response Center ((800)424-8802), and New Mexico Environmental Improvement Division (Hazardous Waste Hotline (827-9329)). He must state:

1. His name and telephone number;
2. Identify the Navajo facility at 501 East Main Street, Artesia;
3. State the time and type of incident (e.g., release, fire);
4. Identify the type and quantity of material(s) involved, to the extent known;
5. Specify the extent of injuries, if any; and
6. Identify the possible hazards to human health, or the environment, outside the facility.

During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

If the facility stops operations in response to a fire, explosion or release, the Emergency Coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

Immediately after an emergency, the Emergency Coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

The Emergency Coordinator must ensure that, in the affected area(s) of the facility, no waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed. He additionally must ensure that all emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

The Emergency Coordinator must ensure the Regional Administrator of the Environmental Protection Agency, and appropriate State and local authorities are notified, that cleanup of hazardous wastes and residues resulting from the emergency event is complete and the emergency equipment has been decontaminated and is ready for service before operations are resumed in the affected area(s) of the facility.

The Emergency Coordinator is responsible for documenting the incident in the operating record by noting the time, date, and details of the incident which required implementation of the contingency plan and submittal of a written report on the incident to the Regional Administrator of the EPA within 15 days after the incident. The report must include:

1. Name, address, and telephone number of the Navajo facility;
2. Date, time, and type of incident (e.g., fire, explosion);
3. Name and quantity of material(s) involved;
4. The extent of injuries, if any;
5. An assessment of actual or potential hazards to human health or the environment, where this is applicable; and
6. Estimated quantity and disposition of recovered material that resulted from the incident.

V. Emergency Equipment

An integral part of Navajo contingency planning pertains to installation, maintenance and inspection of emergency and safety equipment. Navajo maintains onsite a number of fire control mechanisms, spill control and cleanup mechanisms and safety/first aid stations. The locations of the emergency and safety equipment are presented in Figure I-7-2.

Fire control measures include a firewater system, an inert chemical foam generation system, fire blankets and numerous portable fire extinguishers.

Spill control equipment include commercial absorbents, a lugger bucket truck and a vacuum truck. Supplies at the first aid stations include the bandage materials, bandaids, gauze pads and rolls, adhesive tape, butterfly bandages, antibacterial ointments, aspirin, emetic, local and topical anaesthetics, splints (appendage and body), eye wash bottle and solution.

Protective clothing and equipment is provided to protect employees during normal and emergency operations. Hard hats, protective eye wear and steel-toed boots or shoes are the minimum protective clothing requirements. The preparedness and prevention plan contains a listing of the type and location of emergency equipment at the plant.

VI. Control Measures

Navajo has implemented a variety of control measures to minimize the opportunity for an emergency situation to occur. These conditions include routine inspections, monitoring training and maintenance and strict adherence to standard operating procedures at all times. The control measures used to prevent various emergency situations and discussed briefly below.

A. Prevention of Fires and Explosions

1. Prevention of Waste Ignition

The wastes which are routinely generated and disposed of at Navajo are classified as hazardous due to the characteristic of toxicity. However, Navajo may, in

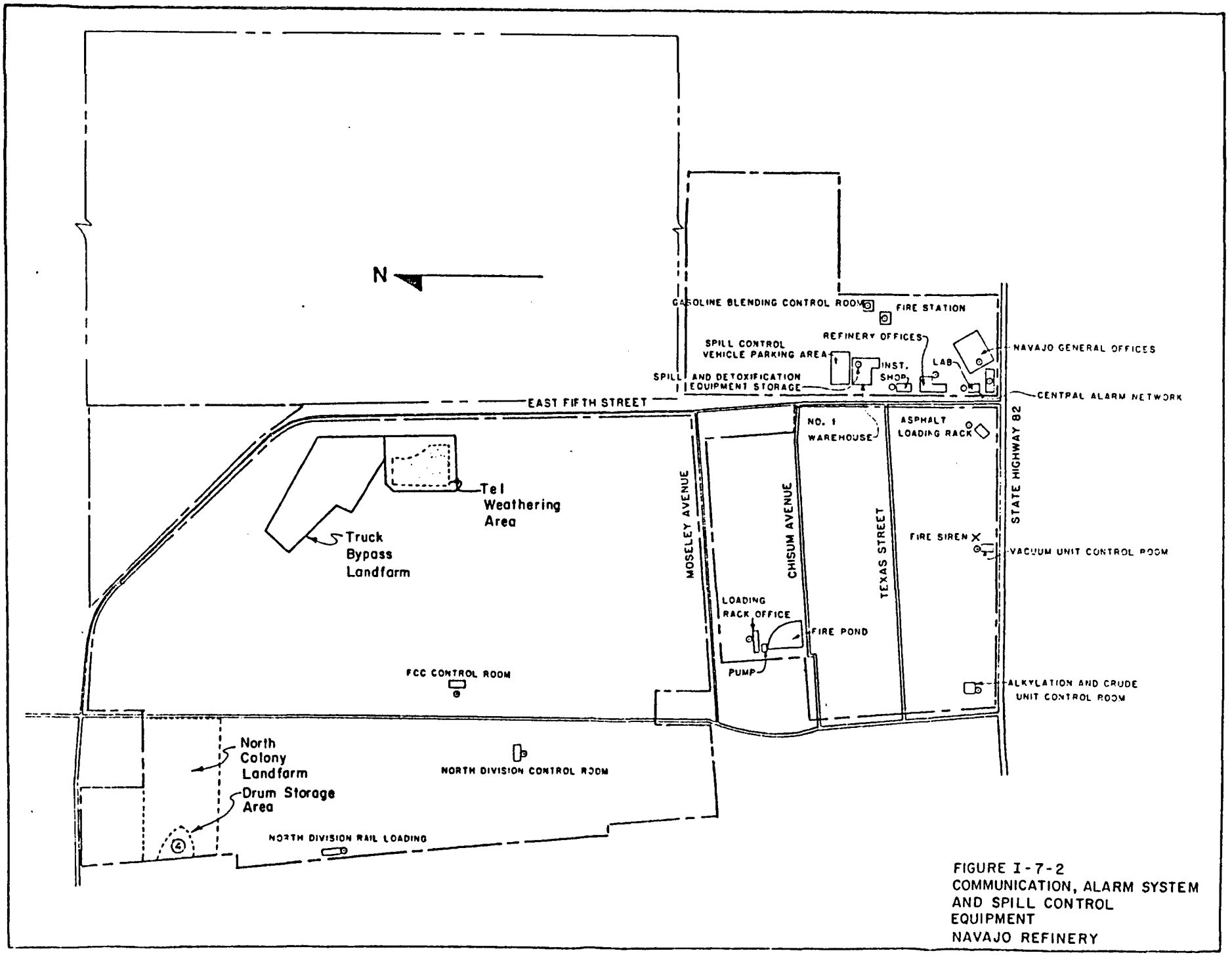

FIGURE I-7-2
COMMUNICATION, ALARM SYSTEM AND SPILL CONTROL EQUIPMENT
NAVAJO REFINERY

isolated instances, generate and dispose of wastes which are classified as ignitable. In this situation, Navajo uses extreme care in the transportation and disposal of these wastes. Techniques used to prevent ignition of these wastes include separation and protection of these wastes from all sources of ignition, the wastes are not stored in sealed containers subject to radiant heat, the wastes are separated from sources of shock or impact and during disposal these wastes are applied to the land treatment plot in such a manner that the resulting waste no longer exhibits the characteristic of ignitability. These measures minimize the opportunity for fires or explosions.

2. General Fire Control Measures

Preventing and extinguishing fires is the responsibility of the Emergency Response Department under the overall direction of the Fire Chief. As part of the Navajo safety training program, persons charged with operating fire equipment during emergencies receive training on the operation and maintenance of fire protection equipment. Navajo annually sends selected employees to the Texas A & M Fire Fighting School to receive further fire fighting training. Navajo's trained and fully equipped fire fighting team also holds monthly training exercises. Additionally, Navajo and the City of Artesia are finalizing plans for a fire training area where further training of Navajo personnel and members of the Artesia Volunteer Fire Department will be given. Direct contact with outside fire fighting assistance may be made using the Emergency Call List shown in Table I-7-2 in that there is cooperative agreement for assistance from the Artesia Volunteer Fire Department.

As indicated on Figure I-7-2, two fire trucks are housed at the Navajo Plant fire station located northeast of the General Offices. The fire trucks are kept ready for use, and trained Navajo personnel are available to operate these vehicles on a 24-hour basis. One of the fire trucks is a 1952 model International with a 500 gpm pumping capacity. A newer 1980 model Ford is also available, with a 250 gpm pumping capacity.

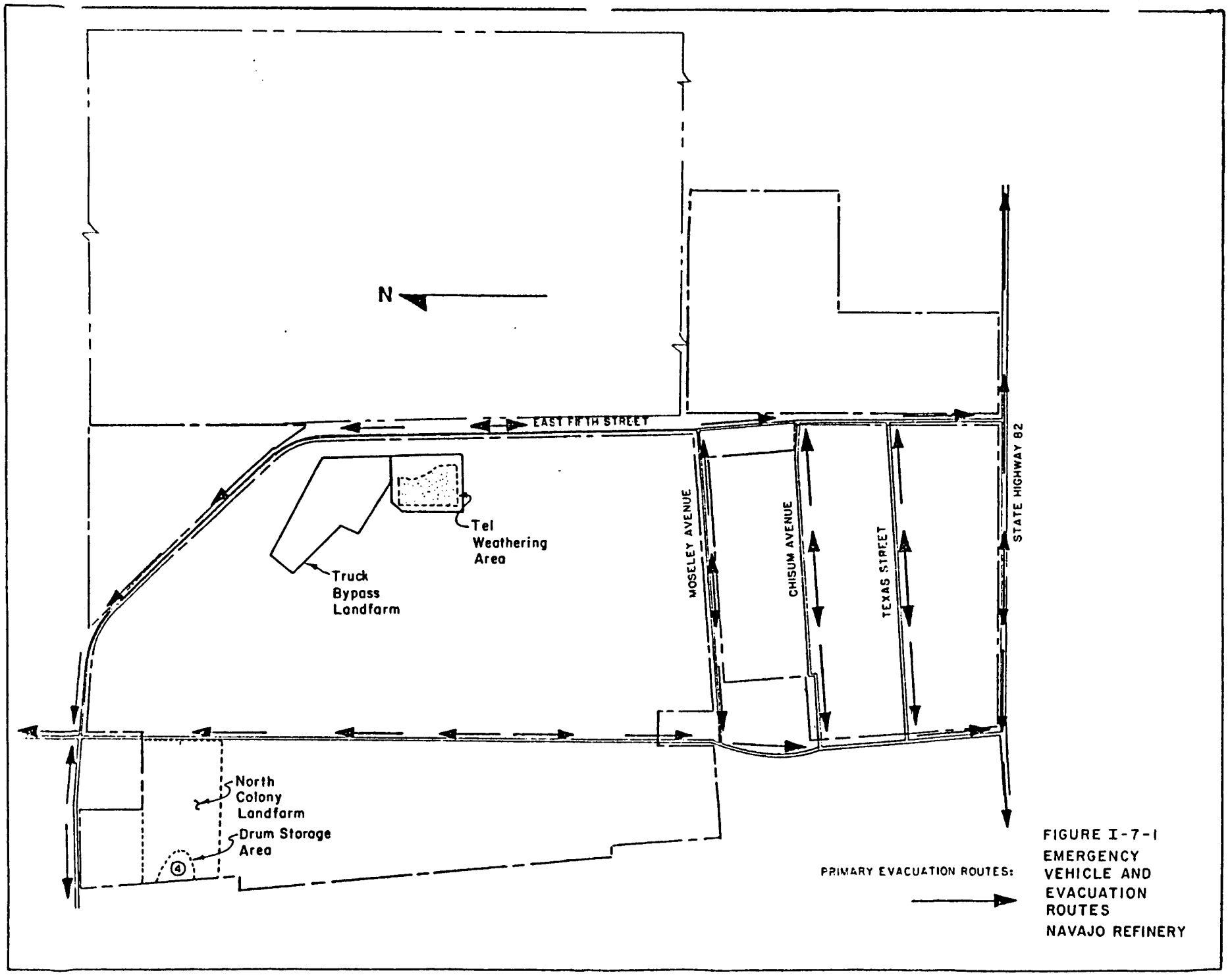

FIGURE I-7-1
EMERGENCY
VEHICLE AND
EVACUATION
ROUTES
NAVAJO REFINERY

The locations of fire loops and fireplugs in the vicinity of the North Colony Landfarm Area are shown on Figure I-7-2. The Navajo Plant fire water system can supply up to 3,000 gpm from the fire pond at a delivery pressure of 100-150 psi. A diesel driven pump is utilized to deliver water to the fire water system. This pump is equipped with an automatic start system tied into the Navajo Plant alarm system. Navajo also has other pumps available for service in emergency situations. Fireplugs and fire monitors are located throughout the Navajo Plant, close to each tank or process unit. The fire monitors consist of an aboveground framework with nozzles which can deliver water in any direction. Additional fire protection materials and equipment are available at numerous locations throughout the Navajo Plant. A list of the locations of these materials and equipment, including protective suits, hoses, fire retardant chemicals, foam generators, pumps, and other miscellaneous equipment, is contained in the Preparedness and Prevention Plan in Chapter I-6.

The dependable operation of all fire fighting equipment is assured by a system of audits and checks. Navajo maintains operating instructions and inspection logs for the fire prevention and extinguishing systems.

B. Prevention of Hazardous Waste Releases

1. Prevention of Sudden Releases

The greatest potential for a sudden hazardous waste release occurs when waste material is removed from the point of generation and transported to the waste management area. For this reason, specific operational protocol have been established to minimize the opportunity for waste spillage. The waste is removed from this point of generation and transported to the disposal site with a vacuum truck or lugger bucket. Prior to initiating any waste removal operation, the vehicle is thoroughly inspected and the safe and proper operation of the vacuum system and tank is confirmed by testing. The truck is then parked in the area designated for waste unloading and waste removal activities initiate. The operator remains with the vehicle at all times during the transfer operation and provides continual supervision, thereby

reducing the chance of an accidental spill. Once the waste load is obtained, the transfer operation is terminated and all drains and connections are inspected to prevent leakage while in transit. The material is transported along a designated transport route to the waste management area.

2. Prevention of Non-sudden Releases

Prevention of non-sudden hazardous waste releases is a key aspect of Navajo's land treatment program. Navajo routinely conducts inspections of the active land farm plots to ensure they are operating efficiently and effectively. Any unusual odors, moisture conditions or hot spots are immediately reported to the Emergency Coordinator so the appropriate responses can be implemented. Further, Navajo's groundwater monitoring and detection program ensure that any release of hazardous constituents will be detected in a timely manner and the appropriate response action initiated.

Direct contact with outside fire fighting assistance may be made using the Emergency Call List shown in Table I-7-2 in that there is cooperative agreement for assistance from the Artesia Volunteer Fire Department.

VII. Specific Response Activities

As a disposer of hazardous wastes, Navajo has developed various emergency response procedures to react to any potential emergency involving the wastes managed at the refinery. The specific response activities differ according to the types of emergency situations which could arise. Emergency response activities taken when reacting to fires, explosions and hazardous waste releases in waste management areas are outlined in the following pages.

A. Fires

Navajo does not routinely generate or dispose of any wastes classified as hazardous due to the characteristic of ignitability. Therefore routine hazardous waste management activities should not provide an opportunity for fires to occur. However, Navajo may, in isolated instances, generate and dispose of wastes classified as

ignitable. To aid in contingency planning for such an unlikely occurrence, Navajo has developed emergency response procedures to effectively react to a fire at waste management units.

Once a fire has been identified at either the Truck Bypass or North Colony Landfarm, emergency response activities will immediately begin. If an operator is at the waste management units when ignition occurs, he will use all the resources available to him to extinguish the fire if it is minor. If these initial attempts are unsuccessful or if the fire is major, he will immediately inform the emergency coordinator of the situation and request assistance. The emergency coordinator will then dispatch fire fighting and first aid teams to the emergency scene. An available emergency supervisor will also be sent to the scene at this time. Evacuation of any injured personnel from the scene and isolating the emergency zone from other portions of the refinery will take first priority. Any injured personnel will receive preliminary medical treatment from Navajo first aid teams located at or near the scene and then will be transported as necessary to Artesia General Hospital for further treatment.

Upon arrival at the scene, the Navajo fire fighting team will begin fire containment and extinguishing activities. The emergency supervisor on the scene will assess the seriousness of the situation and report to the emergency coordinator on the necessity of requesting assistance from the Artesia Volunteer Fire Department and other emergency response teams and the necessity of facility evacuation. These support groups will then be contacted as the need arises and the emergency coordinator will initiate evacuation measures if deemed appropriate. The fire fighting teams will use all the resources available onsite (water, foam, chemical retardants, etc.) supplemented as necessary by outside resources to contain and control the fire. Potentially ignitable materials near the emergency zone will be moved to safe areas if possible and water sprays or other control materials will be applied to adjacent stationary structures to prevent their ignition throughout the containment period.

Once the fire is under control, the fire fighting teams will concentrate on extinguishing the fire using the available resources. Throughout the fire fighting process, efforts will be made to contain any runoff or contaminated residues resulting from the fire. Earth moving equipment, sand bags and other spill containment equipment will be used to isolate these materials from the environment.

Once the fire has been extinguished and cooled, cleanup activities will begin and an investigation as to the cause of the blaze will be conducted. Clean-up activities will proceed rapidly and will continue until the entire site is back in operating condition. Top priority will be given to the removal of hazardous wastes displaced from waste management areas as a result of the fire. Careful consideration will be given to the proper handling of waste materials throughout the clean-up period to prevent undue exposure of clean-up personnel to hazardous constituents. All wastes will be removed by a frontend loader, vacuum truck, lugger bucket truck or properly equipped manual labor and placed in designated storage or disposal areas. Any contaminated soil or articles will be properly disposed of onsite or at a permitted disposal facility.

The emergency coordinator will remain at headquarters throughout emergency response activities providing coordination between all involved parties. The emergency coordinator will provide notification to appropriate personnel on the emergency call list. Artesia General Hospital and the ambulance service will immediately be contacted if serious injuries occur and their services are necessary. The National Response Center and New Mexico Environmental Improvement Division will be contacted as soon as possible during an emergency situation. If the emergency is beyond the capabilities of the Navajo emergency response teams to effectively respond to the situation, the Artesia Volunteer Fire Department, Civil Defense, Red Cross, State, County and City Police will be contacted immediately. Other parties on

the emergency call list will be contacted as necessary. All telephone reporting will provide at a minimum the following information:

1. Emergency coordinator's name and telephone number;
2. Identify the Navajo facility at 501 Main Street, Artesia;
3. State the time and type of incident (e.g., release, fire);
4. Identify the type and quantity of material(s) involved, to the extent known;
5. Specify the extent of injuries, if any; and
6. Identify the possible hazards to human health, or the environment, outside the facility.

The emergency coordinator will also perform all the responsibilities outlined in Section IV.B, Specific Responsibilities of the Emergency Coordinator, including follow-up written notification to the Regional Administrator of the EPA.

B. Explosions

Navajo does not generate or dispose of any wastes identified as explosive by the U.S. Department of Transportation classification system. Navajo does not routinely generate or dispose of any waste classified as hazardous due to the characteristics of reactivity or ignitability. Therefore, routine hazardous waste management activities practiced at Navajo should not provide the opportunity for explosions to occur. However, Navajo may, in isolated instances, generate and dispose of wastes classified as ignitable although there does not appear to be even a remote possibility that management activities could result in a detonation explosion. However, Navajo has developed a contingency plan for such an unlikely occurrence which identifies emergency response procedures to effectively react to explosions at waste management units.

If an explosion occurs at either the North Colony or Truck Bypass Landfarm, Navajo will immediately initiate response activities. The first person to observe the explosion will immediately contact the emergency coordinator. The emergency

coordinator will then dispatch fire fighting and first aid teams to the emergency scene. An available emergency supervisor will also be sent to the scene at this time. Evacuation of any injured personnel from the scene and isolating the emergency zone from other portions of the refinery will take first priority. Any injured personnel will receive preliminary medical treatment from Navajo first aid teams located at or near the scene and then will be transported as necessary to Artesia General Hospital for further treatment.

Upon arrival at the scene, the Navajo fire fighting team will begin fire containment and extinguishing activities. The emergency supervisor on the scene will assess the seriousness of the situation and report to the emergency coordinator on the necessity of requesting assistance from the Artesia Volunteer Fire Department and other emergency response teams and the necessity of facility evacuation. These support groups will then be contacted as the need arises and the emergency coordinator will initiate evacuation measures if deemed appropriate. The fire fighting teams will use all the resources available onsite (water, foam, chemical retardants, etc.) supplemented as necessary by outside resources to contain and control the fire. Potentially ignitable materials near the emergency zone will be moved to safe areas if possible and water sprays or other control materials will be applied to adjacent stationary structures to prevent their ignition throughout the containment period. Once the fire is under control, the fire fighting teams will concentrate on extinguishing the fire using the available resources. Throughout the fire fighting process, efforts will be made to contain any runoff or contaminated residues resulting from the fire. Earth moving equipment, sand bags and other spill containment equipment will be used to isolate these materials from the environment.

Once the fire has been extinguished and cooled, cleanup activities will begin and an investigation as to the cause of the blaze will be conducted. Clean-up activities

will proceed rapidly and will continue until the entire site is back in operating condition. Top priority will be given to the removal of hazardous wastes displaced from waste management areas as a result of the explosion. Careful consideration will be given to the proper handling of waste materials throughout the clean-up period to prevent undue exposure of clean-up personnel to hazardous constituents. All wastes will be removed by a frontend loader, vacuum truck, lugger bucket truck or properly equipped manual labor and placed in designated storage or disposal areas. Any contaminated soil or articles will be properly disposed of onsite or at a permitted disposal facility.

The emergency coordinator will remain at headquarters throughout emergency response activities providing coordination between all involved parties. The emergency coordinator will provide notification to the appropriate personnel on the emergency call list. Artesia General Hospital and the ambulance service will immediately be contacted if serious injuries occur and their services are necessary. The National Response Center and New Mexico Environmental Improvement Division will be contacted as soon as possible during an emergency situation. If the emergency is beyond the capabilities of the Navajo emergency response teams to effectively respond to the situation, the Artesia Volunteer Fire Department, Civil Defense, Red Cross, State, County and City Police will be contacted immediately. Other parties on the emergency call list will be contacted as necessary. All telephone reporting will provide at a minimum the following information:

1. Emergency coordinator's name and telephone number;
2. Identify the Navajo facility at 501 Main Street, Artesia;
3. State the time and type of incident (e.g., release, fire);
4. Identify the type and quantity of material(s) involved, to the extent known;
5. Specify the extent of injuries, if any; and
6. Identify the possible hazards to human health, or the environment, outside the facility.

The emergency coordinator will also perform all the responsibilities outlined in Section IV.B, Specific Responsibilities of the Emergency Coordinator, including follow-up written notification to the Regional Administrator of the EPA.

C. Hazardous Waste Releases

Navajo employs a variety of tactics to minimize the opportunity for hazardous waste releases to the environment. However, if such a release were to occur, Navajo has developed emergency response procedures to react effectively to these releases.

1. Sudden Hazardous Waste Releases

For the purposes of contingency planning, a sudden hazardous waste release will be defined as the discharge of hazardous waste other than during land application of wastes on treatment plots. The prime opportunity for hazardous waste spillage to occur is during removal of waste from points of generation and transportation of these wastes to the waste management areas. A secondary opportunity for hazardous waste spillage is during transport to the disposal area. The major means to prevent spillage at Navajo involves routine inspection of all facilities involved in hazardous waste management supplemented by conscientious and consistent operating performance.

Regardless of the specific source of spillage, the basic spill response activities practiced by Navajo are identical because the chemical and physical waste properties that dictate spill response measures are similar for all routinely generated wastes. These hazardous wastes are oily refinery wastes having sludge like properties. They are classified as hazardous due to the presence of the chromium and lead in the waste extract.

The largest volume of waste that could possibly spill is 30 bbls as this is the capacity of the vacuum truck used to transport the wastes from their point of generation to the waste management areas. A spill could occur if the tank is ruptured and in such an instance, Navajo will immediately initiate spill response activities. The

equipment operator will, upon observing the spill, first isolate personnel from the spill to protect human health and safety. He will then contact the emergency coordinator and notify him of the emergency and provide a preliminary assessment of the situation. This assessment should include the following:

a) the exact location of the spill

b) the waste material involved

c) the estimated quantity of the spill

d) the probable cause of the spill and

e) the spill status

The emergency coordinator will immediately dispatch a spill response team and emergency supervisor to the scene. Upon arrival at the scene, the spill response team will contain the spill using earth, sand bags, commercial absorbent or other containment materials. The goal will be to isolate the spill in all directions. Once isolated, a clean-up crew will be dispatched to the area and the waste material will be removed from the area with a frontend loader, lugger bucket truck, vacuum truck, pick-up truck or properly equipped manual labor. The waste will be taken to the waste management area for disposal. Any contaminated soil or spill contaminated articles will be removed and properly disposed of on-site or at a permitted hazardous waste disposal facility.

Small spills which may occur during routine transfer operations will be contained by the equipment operators and removed from the area using properly equipped manual labor. The spilled waste material and any contaminated soil will be transported to the waste management area and disposed of along with the waste shipment.

2. Non-sudden Hazardous Waste Releases

Non-sudden hazardous waste releases or discharges of hazardous waste to the environment which occur over a length of time and which may not be detected by

Table I-7-2

Emergency Call List

National Response Center	(800)424-8802
Ambulance	748-1011
Civil Defense	746-2704
Fire Department	746-2701
Southwestern Public Service	746-9805
Hospital - Artesia General	748-3333
New Mexico Environmental Improvement Division	827-9329
Mayor - City Offices	746-2122
Police (City of Artesia)	746-2404
Red Cross	746-2252
State Police	746-6113
Sheriff (Eddy County)	887-7551
Weather Service	646-2642

Navajo until the release has already occurred and remedial rather the emergency response is required. The only potential non-sudden hazardous waste release at the Navajo facility would be a violation of the groundwater protection standards established for the refinery's groundwater monitoring program. The response planned for these situations are outlined in the Groundwater Monitoring Plan in Chapter III.

D. Specific Land Treatment Response Actions

Although Navajo has instituted control measures for land treatment facilities which provide a reasonable safety factor to prevent overloading the soil with wastes, Navajo has developed plans for responding effectively to soil overloads. Wastes routinely applied to the land treatment plots are analyzed for selected parameters for each waste application. Off-specification wastes may sometimes be generated as a result of process upsets or other unusual refinery conditions. In most cases, these off-specification wastes will be identified as such and applied at the proper rate to ensure degradation, transformation or immobilization.

It is possible that in some instances, however, these differences may not be observed until the waste is applied to the treatment plot. If this situation occurs, as much of the waste material as possible will be removed and placed in the off-specification holding area. If the material cannot be removed from the treatment plot, remedial treatment will initiate in that area of the landfarm. The treatment will involve applying specific nutrients, neutralization agents, or absorbtion or deactivation materials to alleviate the situation and help to balance the system. The general treatment remedies available to Navajo include adding acid or lime to neutralize acidic or basic zones without accumulating excess salts, adding powdered activated charcoal to adsorb or deactivate excess volatile organic materials or adding nitrogen supplements and straw to loosen and aerate the soil and absorb oil when excess amounts of oily material have been applied. If the hot spot is small, the zone will be

reworked and spread over a greater treatment area so the treatment can be more effective.

VIII. Amendments to Contingency Plan

Amendments to the contingency plan would be required for a variety of reasons, such as advances in technology, a change in facility design or operation, failure of the plan in an emergency, a change in the list of emergency coordinators or a change in the list of emergency equipment. Modifications to the contingency plan are grouped into those requiring major and minor modifications to the permit.

A. Major Modifications

Permit modifications may be requested or agreed upon by Navajo for a variety of reasons as specified in 40 CFR 270.41. Those reasons which impact the contingency plan are listed below. Major modifications may be granted after preparation of a draft permit and other procedures of Part 124.5 or the procedures of an approved State program are followed. In a permit modification, only those conditions to be modified will be reopened when a new draft permit is prepared. Other aspects of the existing permit will remain in effect for the duration of the unmodified permit.

1. Alterations

Material and substantial alterations or additions to the Navajo facility or operations justifying the application of permit conditions which are different or absent from the existing permit are a possible rationale for permit modification (270.41(a)(1)). Navajo will review and possibly amend the contingency plan whenever the facility permit is revised (264.54(a)) or the facility design, construction, operation, or maintenance changes in a way that material increases the potential for fires, explosions, releases of hazardous wastes or hazardous waste constituents or changes the response necessary in an emergency (264.54(c)).

2. Information

Navajo may request a permit modification if information becomes available which was not available at the time of permit issuance and which would have justified the application of different permit conditions at the time of permit issuance (270.41(a)(2)). Technological advances, monitoring data, and other information could justify a modification to the RCRA permit and/or contingency plan.

3. New Regulations

A permit modification may be justified if the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or judicial decision after the permit was issued (270.41(a)(3)). If the permit condition in question was based on a promulgated Part 260-266 regulation or EPA revised, withdrew or modified that regulation upon which the permit condition is based, Navajo may request a modification in accordance with 124.5 within 90 days after Federal Register notice of the action on which the request is based. If a judicial decision remands or stays a portion of the regulations on which the permit condition is based, a request to modify the condition should be filed in accordance with 124.5 within 90 days of the judicial remand. Amended standards, regulations, or judicial decisions could affect facility design and operation and/or the provisions of the closure and post closure plan, justifying a request for a modification.

4. Contingency Plan Failure

The contingency plan must be reviewed, and immediately amended, if necessary, whenever the plan fails in an emergency (264.54).

B. Minor Modifications

With the consent of Navajo, the RCRA permit may be modified without following the procedures of Part 124 for a number of corrections or allowances for changes in the permitted activity (270.42). Navajo will request a minor modification to the contingency plan if: 1) the list of emergency coordinators changes (264.54 (d)), or 2) the list of emergency equipment changes (264.54(e)).

Miscellaneous Control Strategies

There are a variety of techniques used at the Navajo facility to prevent hazards in unloading operations, prevent runoff from waste handling areas, protect water supplies, mitigate the effects of power outages and equipment failures and prevent undue exposure of Navajo personnel to hazardous waste. Many of the potential hazards that arise from handling and management of hazardous waste have been minimized by the engineering design of the Navajo facility supplemented by cautious and conscientious management of operations. Apart from the design of the facility, precautionary techniques are standard operational procedures as described in the Preparedness and Prevention Plan, Chapter I-6. Additional, plans have been developed to respond to different types of emergency situations as described in the Contingency Plan, Chapter I-7. The procedures followed and equipment used to prevent these hazards or mitigate their effects are described for each situation below.

Unloading Operations

Wastes generated at the Navajo facility are removed from generation points periodically and applied to the Navajo landfarm for treatment. The points of generation include the API separator, sumps and tankage. Waste removal from point of generation and waste application to the landfarm are the only hazardous waste unloading operations practiced at the facility. To prevent hazards during these operations, Navajo has developed strict procedures on removing wastes from these sources.

All waste removal activities are conducted with the aid of specific waste removal equipment. As the vast majority of wastes generated at Navajo are sludges, a vacuum truck is used to remove these wastes from their point of generation. Any solid wastes generated at the facility such as kerosene filter clays are removed using

manual tools and a lugger bucket truck. All Navajo personnel involved in waste unloading operations are required to wear protective clothing. At a minimum, this protective gear must include a hard hat, chemically resistant gloves and steel-toed boots.

Stormwater Control

Navajo controls stormwater runoff from all waste management areas in the facility. Stormwater runoff from the waste management areas is prevented by a perimeter diking system constructed around the landfarm areas and the TEL weathering area. These levees are constructed to a minimum height of 3 ft above grade thereby serving dual functions as flood protection and runoff prevention.

Protection of Water Supplies

The waste management techniques practiced at Navajo offer further protection of groundwater supplies. By using land treatment as a means of waste disposal, waste is incorporated and treated in the surficial soils. Also, Navajo operates and maintains a comprehensive groundwater monitoring and detection system to assess the effectiveness of its land treatment program and to detect the presence of any groundwater contamination.

Equipment/Power Failures

Major equipment failures are limited at the Navajo facility by performing detailed equipment inspections according to the Inspection Schedule (for details, see Chapter I-5). The inspections are conducted to detect any abnormality or malfunction in the operation of equipment so routine maintenance may be scheduled according to manufacturer's specifications. If a malfunction is detected, the process is either discontinued until the equipment has been serviced and repaired or the piece of malfunctioning equipment is bypassed and the back-up system put into service if such a system exists. Additionally numerous spare parts are kept on hand at the Maintenance Shop for minor equipment adjustments and repairs.

Equipment associated with hazardous waste management at the Navajo facility is powered by gasoline, diesel fuel or manual labor. A power failure in the internal combustion equipment is highly unlikely as the fuel level in each item is checked prior to initiating waste management activities. Fuel is available onsite to ensure power can be restored to these items in a timely manner.

Personnel Exposure

All Navajo personnel included in waste handled have been fully trained in the techniques and potential hazards associated with the management of hazardous waste generated at the facility. An outline of the training program is contained in Chapter I-12. This program is designed to assist personnel in understanding the degree of hazard associated with each waste activity so that each employee can properly equip himself to prevent undue exposure to hazardous wastes. Equipment available at the site to protect personnel from exposure include respirators, chemically resistant coveralls, gloves, hoods and boots, steel-toed boots, hardhats, safety glasses, goggles and shields. A more complete inventory of protection equipment and description of the capabilities of each item is presented in the Contingency Plan contained in Chapter I-7.

Chapter I-9

Ignitable, Reactive and Incompatible Waste Handling

Listed hazardous wastes generated at Navajo are characterized as hazardous because the extract of similar waste samples analyzed by the U.S. Environmental Protection Agency contained a sufficient concentration of chromium and lead. Listed and unlisted oily wastes generated at the refinery are compatible as they are petroleum derivatives. Certain unlisted wastes generated by Navajo may, in isolated instances, exhibit the characteristics of ignitability or reactivity. In order to provide optimum operating flexibility, this section is submitted to document the waste handling which will be followed to prevent accidental ignition or reaction of ignitable or reactive waste in accordance with 264.17 and 264.281.

Any ignitable or reactive wastes which may be generated at the Navajo facility, such as from an in plant spill, will be removed in a timely manner using the unloading procedures described in Chapter I-8. Once removed, the waste will be applied to and incorporated into the soil at Navajo's land treatment facilities. The waste will be incorporated in such a manner that the resulting waste no longer exhibits the characteristics of ignitability or reactivity. In addition to these waste handling procedures, Navajo has instituted numerous precautions to prevent accidental ignition or reaction of all onsite waste and processing materials as described in Chapter I-6, Preparedness and Prevention Plan. These precautions are taken to prevent reactions which generate extreme heat or pressure; fire, explosion, or violent reaction; produce uncontrolled toxic or flammable mists, fumes, dust, or gas; or damage the structural integrity of the facility.

Closure and Post Closure Plan

Closure and Post-Closure Plan

I. Introduction

The closure and post closure plan satisfies the requirements of subpart G, specifically 264.110 (applicability), 264.111-264.115 (which concern closure), 264.117-264.120 (which concern post closure care) and facility specific requirements in 265.228 (for surface impoundments) and 264.280 (for land treatment facilities). This plan has been developed to document the intentions of Navajo to properly close the North Colony and Truck Bypass landfarms and TEL weathering area. The plan demonstrates the environmental considerations and technical criteria utilized in preparing a comprehensive closure plan which is environmentally sound, technically feasible, legally compliant, safe and timely.

Closure activities are designed to minimize the need for site maintenance, to the extent possible, and minimize the potential for post-closure escape of hazardous waste, hazardous waste constituents, contaminated runoff or waste decomposition byproducts to the groundwater, surface water, and atmosphere. Navajo will maintain a copy of the approved, current closure plan onsite during the operating life of the facility.

II. Plan Modifications

Modifications to the closure and post closure plan would be required for a variety of reasons, such as advances in technology, regulatory reform, a change in facility design or operation, or a change in closure scheduling. Modifications to the closure and post closure plan are grouped into those requiring major and minor modifications to the permit.

A. Major Modifications

Permit modifications may be requested or agreed upon by Navajo for a variety of reasons as specified in 40 CFR 270.41. Those reasons which impact the closure and

post closure plans are listed below. Major modifications may be granted after either the preparation of a draft permit and other procedures of Part 124.5 or the procedures of an approved State program are followed. In a major permit modification, only those conditions to be modified will be reopened when a new draft permit is prepared. Other aspects of the existing permit will remain in effect for the duration of the unmodified permit.

1. Alterations

Material and substantial alterations or additions to the Navajo facility or operations justifying the application of permit conditions which are different or absent from the existing permit are possible rationales for a permit modification (270.41(a)(1)). Navajo will amend the closure and post closure plan whenever changes in operating plans or facility design affect the closure plan (264.112(b) and 264.118(b)). If a permit modification is required, the change to the closure and post closure plan will be submitted concurrently with the RCRA permit modification request. If a permit modification is not needed to authorize the change in operating plans or facility design, the request for modification of the closure and post closure plan will be made within 60 days after change in plans or design occurs.

2. Information

Navajo may request a permit modification if information becomes available which was not available at the time of permit issuance and which would have justified the application of different permit conditions at the time of permit issuance (270.41(a)(2)). Technological advances, monitoring data, and other information could justify a modification to the RCRA permit and/or closure and post closure plan.

3. New Regulations

A permit modification may be justified if the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or judicial decision after the permit is issued (270.41(a)(3)). If the permit

condition in question is based on a promulgated Part 260-266 regulation, or if EPA revises, withdraws or modifies that regulation upon which the permit condition is based, Navajo may request a modification in accordance with 124.5 within 90 days after Federal Register notice of the action on which the request is based. If a judicial decision remands or stays a portion of the regulations on which the permit condition is based, a request to modify the condition should be filed in accordance with 124.5 within 90 days of the judicial remand. Amended standards, regulations, or judicial decisions that could affect facility design and operation and/or the provisions of the closure and post closure plan, can justify a request for a modification.

4. Closure/Post Closure Activities

A modification to the permit may be requested for an amendment to the closure and post closure plan (270.41(5)). Navajo may request an extension of mandatory time frames for closure activities required by 264.113, which requires Navajo to treat, remove from the site or dispose of onsite all hazardous wastes within 90 days in accordance with the approved closure plan. All closure activities must be completed within 180 days after receiving the final volume of waste. An extension of these time limitations is possible if the activities, by necessity, require more time, or if the facility has the capacity to receive additional waste, or if there is the reasonable likelihood that operation of the site will recommence with a different owner/operator, and therefore closure would be incompatible with continued operation of the site. In either case, Navajo will continue actions to prevent threats to the human health and environment.

Navajo may request a modification of the 30 year post closure period required by 264.117(a). During the 180 day period preceding closure and anytime thereafter, Navajo can submit saturated or unsaturated zone monitoring results, wastes analyses, advanced technological data or other information indicating the facility is secure and a reduced period is sufficient to protect human health and the environment.

Navajo may request a permit modification to disturb the integrity of the vegetative cover or other components of the containment system under 264.280(d) or 264.117(c). The modification request requires a demonstration that the level of hazardous constituents does not exceed the background value by a statistically significant amount or the disturbance is necessary to the proposed use of the property and will not increase the potential hazard to health and the environment or the disturbance is necessary to reduce a threat to human health or the environment.

B. Minor Modifications

With the consent of Navajo, the RCRA permit may be modified without following the procedures of Part 124 for a number of corrections or allowances for changes in the permitted activity (270.42). Navajo will request a minor modification to the closure and post closure plan if the maximum waste inventory in storage and treatment exceeds the closure plan estimate (264.112(a)(2)), the expected year of closure or schedule for final site closure differs from the closure plan estimate (264.112(a)(4)) or an extension of the 90 day period to treat, remove and dispose of wastes and 180 day period to close the site is requested prior to filing notice of intent to close the site (264.113).

III. Closure Plan

The closure plan for Navajo is designed to result in closure of the facility in an environmentally sound and technically feasible manner, in accordance with federal regulations pertaining to closure of hazardous waste management and disposal facilities. The plan presented here is a phased approach which ensures the facility will be closed in an organized and timely fashion. The administrative personnel and notification requirements are briefly discussed, followed by a detailed facility and site closure plan.

A. Personnel

The personnel qualifications and job descriptions of key personnel responsible for administration of the plan are as follows:

1. Closure Coordinator

Closure and post-closure activities will be supervised by a Closure Coordinator. The Closure Coordinator will be responsible for coordinating all closure work efforts to ensure the closure is performed in a timely manner and in accordance with the approved closure plan. The Closure Coordinator will monitor facility operations during closure activities, oversee waste handling and decontamination procedures and ensure that disposal facilities are closed and maintained in accordance with the plan. The Coordinator is responsible for updating the plan whenever changes in the closure plan or scheduling, changes in facility design or operation, or changes in waste management technology indicate a modification is necessary. The Closure Coordinator will also serve as a liaison between Navajo and regulatory agencies for inspection, evaluation and approval of closure activities.

The Closure Coordinator will have sufficient technical education or experience to understand the management of a hazardous waste disposal facility. He will have a thorough working knowledge of all management practices utilized at such a facility and will be familiar with the details of this plan. Prior to and during closure periods, the Plant Manager, Technical Manager or Environmental Superintendent may serve as Closure Coordinator.

2. Field Manager

A Field Manager will be selected to aid in supervising closure activities and to provide the certification of closure as required by 40 CFR 264.115. The Field Manager will be a registered professional engineer or qualified soil scientist who is familiar with the design and operation of the facility and the closure plan. Prior to initiating closure activities, the Field Manager will review the closure plan and help formulate any necessary revisions in the plan. He will supervise the technical aspects of the plan during closure to ensure all activities are performed in accordance with the approved closure plan. The Field Manager will certify that closure has been accomplished in accordance with the specifications of the approved closure plan.

B. Notification of Intent to Close

The Regional Administrator of the EPA and/or Director of the State hazardous waste management program will be notified at least 180 days prior to the date Navajo intends to initiate each of the four phases of closure activities. Closure activities will be initiated within 30 days after the date the last shipment of hazardous waste is received at the plant area scheduled for closure.

C. Closure Plan Overview

The closure plan addresses the North Colony and Truck Bypass landfarms, the TEL weathering area, the drum storage area and equipment involved in waste management activities. The North Colony and Truck Bypass landfarms are 4 and 3 ac land treatment facilities, respectively, which will be closed in accordance with 264.280. Navajo will maintain all operational controls necessary to optimize waste treatment at closure and to manage runon and runoff. Navajo will also conduct unsaturated zone monitoring and establish a vegetative cover over the landfarm plots. The inactive TEL weathering area is a 2 ac surface impoundment which will be closed in accordance with 265.228. This closure plan addresses the steps necessary to remove all wastes and contaminated soils from the TEL weathering area and to apply these wastes to the Truck Bypass landfarm for treatment. The drum storage area is used to accumulate empty drums awaiting offsite shipment and storage of raw materials. It is not a hazardous waste management facility per se, but it will be closed in accordance with 264.178 by removal of drums and steam cleaning the concrete pad. Facility waste management equipment will be decontaminated by steam cleaning after the last contact with wastes. All rinsate generated by these decontamination procedures will be applied to the landfarm plots for treatment.

1. TEL Weathering Area

The 2 ac TEL weathering area is a nonregulated surface impoundment which has received hazardous and non-hazardous refinery wastes. The facility has not received

waste after January 26, 1983, so it will be closed in accordance with 265.228 interim status standard by removing wastes and contaminated soils. The removed wastes, residues and soils will be managed as hazardous wastes through land application to the Truck Bypass landfarm, once that facility is permitted to receive hazardous wastes. Accordingly, closure of the TEL weathering area will proceed in three stages: waste characterization, treatment demonstration and permitting of the Truck Bypass landfarm, and waste excavation and decontamination of the TEL weathering area.

a. Waste Characterization

Representative samples of waste stored in the TEL weathering area have been collected and are being analyzed for select parameters. Waste samples have been obtained from various portions of the surface impoundment as discussed in the waste analysis plan, Chapter I-3, and the Truck Bypass Landfarm Section, Chapter II-2. The samples are being analyzed by a commercial laboratory, and results should be available by December 19, 1983. However, the wastes stored in the TEL weathering area should be amenable to land treatment as they are oily refinery wastes, albeit weathered and with a lower water content. In anticipation of this closure plan, Navajo plans to permit the Truck Bypass landfarm as a hazardous waste disposal facility so that it may receive the wastes removed from the TEL weathering area during closure of the impoundment.

b. Permitting of the Truck Bypass Landfarm

Navajo intends to conduct the waste and soil characterization, perform the treatment demonstration and develop the design and operating information necessary to permit the Truck Bypass landfarm as a hazardous waste land treatment facility. Navajo will characterize the treatment zone, develop saturated and unsaturated zone monitoring programs and construct the necessary runon and runoff control structures to prepare the site for receipt of hazardous waste excavated from the TEL weathering area. Navajo intends to use this design and operational data in conjunction

with the waste characterization results to design a treatment demonstration which will show that the hazardous constituents in the applied waste can be completely degraded, transformed or immobilized in the treatment zone of the Truck Bypass landfarm. The plan for this demonstration will be prepared once the waste and soil characterization results have been obtained.

The results of the treatment demonstration will be used to define operating parameters which will be specified in the permit. One of the key operating parameters which directly concerns closure of the TEL weathering area will be the waste application rate. As Navajo intends to excavate wastes from the impoundment at a rate equivalent to the rate at which the waste can be applied to the treatment zone, the application rate specified in the permit will determine in part the closure schedule for the TEL weathering area.

c. Waste Excavation and Site Decontamination

Wastes stored in the TEL weathering area have been sampled for characterization purposes, and these wastes will be used to conduct the treatment demonstration at the Truck Bypass landfarm. These are the only times that waste will be removed from the surface impoundment prior to closure. Closure activities at the TEL weathering area will begin once the Truck Bypass landfarm is permitted. A closure schedule will be developed at that time which allows wastes to be excavated from the surface impoundment and applied to the treatment zone according to the rates specified in the permit. This schedule will establish a time table for removing and treating all wastes stored in the TEL weathering area.

The results of the waste characterization work will indicate the type and amount of hazardous constituents present in the waste. At a minimum, chromium and lead will be selected as surrogate compounds due to the known elevated concentrations of these parameters. Navajo will conduct soil sampling and analyses on soils nearby the TEL weathering area to identify the background concentration of surrogate compounds

which will be used to define the extent of soil contamination. Once these background levels are established, wastes and contaminated soils will be excavated until underlying soils contain the surrogate compounds at concentration at or below background levels. These excavated materials will be applied to the truck bypass landfarm. The surface impoundment will be considered closed once all wastes and contaminated soils have been removed from the TEL weathering area, and site decontamination is verified.

2. North Colony and Truck Bypass Landfarms

The 4 ac North Colony landfarm is used to treat hazardous refinery wastes generated by Navajo. The 3 ac Truck Bypass landfarm will be used to treat wastes excavated from the TEL weathering area and to treat oily refinery wastes generated by Navajo. Both land treatment facilities are anticipated to be viable treatment and disposal facilities as long as the refinery is operating. Navajo intends to close these facilities when refinery operations cease waste generation in accordance with 264.280.

On an annual basis during the normal operating life of these landfarms, Navajo analyzes samples of surficial soils for pH and nutrients. Soil amendments in the form of lime and fertilizer are then incorporated into the soil to maintain pH and nutrient levels within the desired ranges. Prior to the final waste application, soils will be analyzed to establish whether soil amendments are necessary. If necessary, soil additives will be incorporated into the treatment zone to prepare the landfarm to receive wastes. Once the refinery has ceased operation, all accumulated waste will be removed from the points of generation using standard Navajo waste removal procedures. These wastes will then be applied to the landfarm plots along with any spent wash waters generated as a result of decontamination of the drum storage area and waste handling equipment. Navajo will till the treatment zone as soon as possible after the final application of wastes to the treatment zone. Navajo will continue normal operating practices, i.e., till the treatment zone, add fertilizer, maintain pH

and control soil moisture, during the 90 days following the last waste application. The inspection schedule, preparedness and prevention precautions and contingency and security considerations pertaining to the land treatment facilities will remain in effect as a part of standard landfarm operations at closure.

Unsaturated zone monitoring will be conducted at the land treatment facilities during closure activities. The results of unsaturated zone monitoring will be used inconjunction with inspection results to determine when sufficient treatment has occurred to discontinue tilling and to establish a vegetative cover. Three months after the final waste application, soil and soil pore liquid samples will be obtained in accordance with the unsaturated zone monitoring plan established for each facility. If the soil pore liquid monitoring results do not indicate the presence of hazardous constituents, soil pore monitoring will be discontinued. Navajo does not anticipate conducting soil-pore liquid monitoring for more than 90 days following the last application of wastes. If soil core monitoring does not indicate the presence of metals at levels in excess of phytotoxic concentrations, the tilling of landfarm plots will be discontinued. Soil core monitoring however will continue through closure and the post-closure care period. Once it has been determined that no further tilling or other soil disturbance is necessary for sufficient treatment of wastes, Navajo will establish a vegetative cover over the landfarm plots. Potential candidates for vegetative cover include Russian Thistle and Johnson Grass as these native species require little or no maintenance to thrive. Once this cover has been established, the land treatment facilities will be considered to be closed.

3. Drum Storage Area

While the drum storage area is located within a hazardous waste management facility, it is not used for the storage of hazardous waste. The drum storage area contains empty drums awaiting shipment and drums containing raw materials. The following discussion of closure is included to ensure a consistent approach with closure of the North Colony Landfarm Area.

Approximately 11,300 square feet of area has been made available for use as a drum storage area. The drum storage area consists of a concrete pad enclosed within the fenced boundaries of the North Colony Landfarm Area. The Drum Storage Area is marked with appropriate signs.

Since it is not anticipated at this time that any hazardous wastes will be contained in this area at the time of closure, final closure procedures to be used will consist of removing all nonhazardous drums and steam cleaning the concrete pad. The rinsate will be applied to the adjacent North Colony land treatment facility.

4. Miscellaneous Activities

a. Security

The North Colony landfarm and Truck Bypass landfarm will be secured during closure activities by the locked fences surrounding each facility. In addition, prominent bilingual sings will be maintained on the fencing around each area. These measures should effectively prevent unauthorized contact between humans or livestock and the wastes or associated facilities during closure.

b. Inspection and Maintenance

Inspection and maintenance of the facilities will be continued during closure activities as during the operating life of the facilities. The scope and frequency of all inspections are detailed in the Navajo inspection plan. Any maintenance determined to be necessary by the inspections will be performed immediately by Navajo personnel.

5. Survey and Certification

Two types of professional certification will be obtained at the end of closure activities. First, an independent registered professional engineer and/or soil scientist and the owner will certify that the facilities have been closed in accordance with the approved plan. Second, a professional land surveyor will prepare and certify a survey plat indicating the locations and dimensions of disposal facilities to permanently surveyed benchmarks. The survey plat will be submitted to the Eddy County Clerk and

will contain a note, prominently displayed, which states Navajo's obligation to restrict disturbance of the site. In addition, a record of the type, location, and quantity of hazardous wastes disposed of within each land treatment facility will be submitted to the Regional Administrator and to the Eddy County Clerk.

IV. Post Closure Plan

The post closure plan for Navajo is designed to provide maintenance and monitoring of closed management areas in an environmentally sound and technically feasible manner, in accordance with federal regulations pertaining to post closure care of hazardous waste management facilities. The plan presents post closure monitoring and maintenance procedures to be conducted on the closed North Colony and Truck Bypass landfarms.

A. Post Closure Plan Overview

Post closure care is required for the North Colony and Truck Bypass landfarms. The post closure care requirements care for these land treatment facilities involve continuing operations necessary for the immobilization of hazardous constituents present within the treatment zone, maintaining the perimeter dikes and vegetative cover, continuing soil-core monitoring and performing saturated zone monitoring.

The post closure care period is anticipated to continue for 30 years following final closure of the Navajo facilities in accordance with 264.117(a)(1). However, the EPA may reduce the post closure care period if monitoring results, waste characterization work, application of advanced technology or alternate disposal, treatment or recovery techniques indicate that the facility is secure and the reduced period is sufficient to protect human health and the environment. Alternatively, the EPA may extend the post closure care period if monitoring results indicate a potential for waste migration at levels which may be harmful to human health or the environment.

Post closure use of the Navajo facilities will not disturb the integrity of final vegetative cover systems as required in 264.117(c), unless the EPA finds that the

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

The post closure activities described in this plan have been developed in accordance with 264.118. The plan provides a description of the planned monitoring activities and frequency with which they will be performed to comply with Part 264, Subparts F and M during the post closure care period. The plan also includes a description of the planned maintenance activities and frequency with which they will be performed to ensure the integrity of the final vegetative cover systems in accordance with the requirements of Subpart M. Procedures which Navajo will follow when amending or modifying the post closure plan are present in sections II.A and II.B of this chapter, Major and Minor Modifications.

B. Post Closure Activities

The post closure plan is designed to comply with all post closure requirements contained in 264.117 through 264.120, including maintenance and monitoring throughout the post closure care period. Additionally, the post closure plan is designed to satisfy the specific post closure care requirements for land treatment facilities in 264.280. Post closure responsibilities include site security, facility inspections, maintenance of final vegetative cover, stormwater controls, and maintenance and monitoring of the unsaturated and groundwater monitoring systems, as required, in accordance with the provisions of 264.118.

1. Site Security and Inspections

Although no wastes will remain exposed after completion of closure activities, access to the site by the public or domestic livestock will be restricted by perimeter fencing and warning signs. Security devices will be maintained to prevent unauthorized entry to the management area during the post closure care period.

Navajo will conduct inspections of the site to determine the need for maintenance or other corrective measures. The inspections will be conducted by an

employee or agent of Navajo and will include a walk over visual inspection of vegetative cover systems in and adjacent to treatment areas, security fencing and devices, the monitoring systems and the perimeter dikes. Vegetative cover systems will be inspected for evidence of erosion or washout, dead vegetation, discoloration, burrowing animals, and any other circumstance impacting the integrity of the final cover. Inspections will be conducted on the security systems to identify holes or breaks in the fences, to test the condition of gates and locking devices and to assess the condition of perimeter warning signs. The monitoring systems will be inspected for signs of casing failure. Perimeter dikes will be inspected to ensure that rainwater is controlled. It is anticipated that it will take approximately two hours per month to effectively inspect all monitoring devices and all fences, gates, and other security equipment necessary to ensure protection of the land treatment facilities from unauthorized access during the thirty-year period and make minor repairs. Maintenance will be performed immediately when necessary.

2. Maintenance

Maintenance of the closed land treatment facilities will be minimal. The vegetative cover over the treatment plots will be selected so that it sustains growth with little maintenance. The only items which may require periodic maintenance are the runon and runoff control structures surrounding each treatment facility. The control of runoff and runon in closed management areas is achieved through maintenance of the perimeter diking systems. The perimeter dikes will contain stormwaters impacting these areas and allow them to evaporate or percolate.

3. Unsaturated Zone Monitoring

Soil pore liquid monitoring will be discontinued after 90 days following the last application of wastes. Therefore, it is assumed soil pore liquid monitoring will be conducted only during closure activities and not during the post closure care period. Soil core monitoring will be conducted during post closure with decreasing frequency

according to a progressive geometric schedule of ½, 1, 2, 4, 8, 16 and 30 years after closure. This reduced frequency is proposed because the risk of hazardous constituent migration will be reduced over time in the closed landfarms. Approximately 6 composite cores will be taken from the North Colony and Truck Bypass landfarms and composited.

4. Groundwater Monitoring System

Navajo will maintain the groundwater monitoring system in accordance with 264.118(a)(2) by ensuring the function of the groundwater monitoring equipment installed and operated as specified in Part 264, Subpart F. Navajo will inspect the components of the groundwater monitoring system quarterly throughout the post closure care period for signs of wear and malfunction. The well casings will be visually inspected for signs of failure and contamination of the screened interval by surface water or groundwater. Repairs will be made to the system as required and in the event of irreparable casing failure, the well will be abandoned using approved abandonment techniques such as plugging the well bore to the surface with cement or other grout material.

A description of the planned monitoring activities and frequencies at which they will be performed to comply with Subpart F during the post closure care period is provided in accordance with 264.118(a)(1). As specified in 264.90(c)(2), the Subpart F regulations pertaining to groundwater protection apply during the post closure care period under 264.117 if Navajo is conducting a detection monitoring program under 264.98. Therefore, the groundwater monitoring discussed in this part will reflect the monitoring activities and frequencies performed to comply with the requirements for conducting a detection monitoring program.

The detection monitoring program instituted following final closure of the Navajo facilities will utilize the existing groundwater monitoring system which satisfies the general groundwater monitoring requirements specified in 264.97. Navajo

will continue detection monitoring which should provide a reliable indication of the presence of hazardous constituents in the groundwater. Navajo will obtain one sample for each well in the groundwater monitoring system semiannually during the post closure care period.

V. Cost Adjustment

A written estimate of closure and post-closure costs is kept at the Navajo Plant. These costs represent the cost of closure at the point in its operating life when the extent and manner of its operation would make closure most expensive. These cost estimates will be adjusted whenever changes in the Closure and Post-closure Plan affect the associated costs. Also, the cost estimates will be adjusted annually to reflect inflation over the previous year by using an inflaction factor derived form the annual Implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in its Survey of Current Business.