GW - 21

REPORTS

YEAR(S):

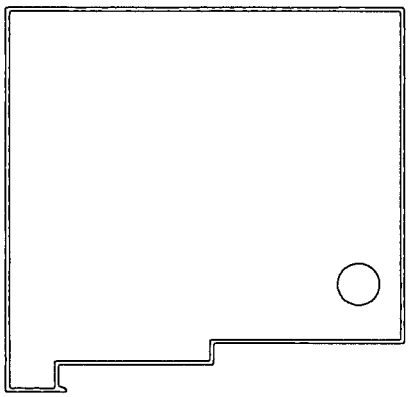
1994

MARATHON

MARATHON OIL COMPANY
MID-CONTINENT REGION

GROUNDWATER DISCHARGE PLAN
GW-21

INDIAN BASIN GAS PLANT



EDDY COUNTY
NEW MEXICO

MARATHON OIL COMPANY
INDIAN BASIN GAS PLANT
GROUNDWATER DISCHARGE PLAN

Submitted on behalf of the working interest owners to
State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division

October 31, 1994

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TYPE OF OPERATION

The major purpose of the facility is gas processing. Although the components of the plant have been updated since it first began operations in 1966, the basic function and purpose of the plant have not changed. The plant owners have invested in new technology and replacement of aging equipment as necessary.

OPERATOR/ LEGALLY RESPONSIBLE PARTY & LOCAL REPRESENTATIVE

The name of the operator is Marathon Oil Company. The mailing address for the Mid-Continent Region is P.O. Box 552, Midland, Texas 79702-0552. The telephone number for the Region office in Midland is (915) 682-1626.

The local Marathon Oil Company representative at the Indian Basin Gas Plant is Noel R. Garza, Plant Superintendent. The street address of the plant is 429 Marathon Road (Eddy County Road 401). The mailing address is P.O. Box 1324, Artesia, New Mexico 88210. The plant telephone number is (505) 457-2621.

LOCATION OF FACILITY

The Indian Basin Gas Plant (facility) is located in the Northeast 1/4 of Section 23, T21S, R23E, NMPM, Eddy County, New Mexico, approximately 20 miles northwest of Carlsbad and 28 miles southwest of Artesia. Figure 1 is the Martha Creek 7.5-minute topographic quadrangle showing the location of the gas plant.

The commingled effluent, which consists of exempt gas processing fluids and produced water, is discharged into two Marathon-operated Class II injection wells located on adjacent Bureau of Land Management (BLM) property. The principal injection well is the Marathon Indian Basin Gas Com Well No. 1, located in the Northwest 1/4 of Section 23, T21S, R23E. Marathon Federal SWD Well No. 1, located in Unit K in the Southwest 1/4 of Section 24, T21S, R23E, is maintained as a backup well. Waste effluent from various plant processes is collected and conveyed by the open drain piping system, the closed drain piping system, and several underground pipelines. The various effluents are commingled and injected into one of the two wells (Figure 1). Other minor discharges occur at the plant in the Southwest 1/4 of the Northeast 1/4 of Section 23, T21S, R23E (Figures 1 and 2):

1) Cooling tower effluent in the form of a spray or mist is discharged to the ground around the base of the cooling tower;

2) Exempt nonhazardous or nonexempt nonhazardous hydrocarbon-contaminated soils are treated in the plant landfarm;

3) Groundwater is added to landfarm soils with a sprinkler system to maintain the moisture content at optimum levels and thereby assist in the bioremediation process; and,

4) Solid sulfur is discharged onto the ground on the west side of the plant.

LANDOWNER

Marathon Oil Company is the landowner of record of a 160-acre site legally described as the Northeast 1/4 of Section 23, T21S, R23E, NMPM, Eddy County, New Mexico. The gas plant facility, which consists of approximately 60 acres, is located on the 160-acre property. Marathon's corporate headquarters address is P. O. Box 3128, Houston, Texas, 77253. Correspondence regarding the site should be directed to the Plant Superintendent, Noel R. Garza, at the plant address provided under the heading "OPERATOR/ LEGALLY RESPONSIBLE PARTY & LOCAL REPRESENTATIVE."

FACILITY DESCRIPTION

Figure 2 is a survey of the gas plant site showing the plant perimeter fence, stormwater berms, most of the tanks, cooling tower, landfarm, sulfur pit, landfill, locations of chemical and fuel storage facilities, processing facilities, and drum storage areas. The gas plant facility occupies approximately the Southwest 1/4 of the Northeast 1/4 of Section 23, T21S, R23E. Figure 1 shows the plant site, the boundary of the 160-acre property, and the adjacent property managed by the BLM.

SOURCES AND QUANTITIES OF EFFLUENTS & WASTE SOLIDS

Effluents

The principal plant effluent is the commingled effluent (Effluent No. 1) consisting of produced water and various other plant effluents. Current estimated volumes of eight effluents that compose the commingled effluent (Effluent Nos. 3, 4, 5, 6, 7, 8, 9, and 10) and two other plant effluents (Effluent Nos. 11 and 12) are identified in Table 1. Effluent source quantities at the plant are variable and depend upon plant and field operations. Commingled effluent is normally discharged into the two Marathon-operated, injection wells; however, water trucks occasionally transport commingled effluent to commercial off-site disposal wells (Effluent No. 2) .

Produced water (Effluent No. 3), cooling tower blowdown (Effluent No. 4), and boiler and condenser blowdowns (Effluent No. 5) consist of a combination of wastewater and chemical additives. The name and volume of additives in each effluent are listed on Table 1. These effluents, effluent from cleaning operations (Effluent No. 7), and miscellaneous plant process effluents (Effluent No. 8) are commingled via the open drain piping system which drains to the skimmer basin before being pumped to the steel saltwater tank.

Waste oil (Effluent No. 6) is mostly collected and conveyed by the open drain system and eventually becomes part of the commingled effluent. Vehicle motor oil is changed on the concrete containment on the west side of the plant (Figure 2) and the waste oil is poured into the 500-gallon, waste oil storage tank located within the containment. In addition, waste crankcase oil from the chemical injection pump is hand carried from the pump to the waste oil storage tank. The oil is stored in the tank for several months until enough oil accumulates to warrant transport of the oil-filled tank to a used oil recycling facility.

Softwater regeneration and reverse osmosis wastewater (Effluent No. 9), groundwater contaminated with condensate (Effluent No. 10), and Lower Queen groundwater (Effluent No. 11) are delivered directly to the commingled effluent disposal system by underground pipelines. Groundwater is delivered directly to the gas plant landfarm via underground pipeline (scheduled improvement for 1995).

Domestic sewage (Effluent No. 12) is not commingled with other plant effluent and therefore is regulated by the New Mexico Environment Department. Sewage is conveyed through an underground pipeline to an underground septic tank which is designed to drain the sewage leachate. The septic system was installed prior to December 1972.

Solid and Liquid Wastes

Solid and liquid wastes are generated at the plant that are not part of the commingled effluent or conveyed by underground piping. The quantities and estimated frequency that these wastes are accumulated are provided in Table 2. Table 2 also characterizes each waste as either exempt, nonexempt, or NORM waste. The appropriate waste disposal method and location of disposal are indicated. In addition, the storage location of the waste prior to disposal is furnished.

The Safety-Kleen parts cleaning unit containing hazardous solvent is located in the pumper shack. Some cleaning operations involve the use of the solvent which is stored in the 55-gallon cleaning unit, serviced and maintained by Safety-Kleen. Safety-Kleen recycles the solvent monthly. The Environmental Protection Agency (EPA) small quantity generator number for hazardous waste generated at the Indian Basin Gas Plant is NMO 982 760 183. The EPA hazardous waste site identification is NMO-1406.

Laboratory wastes are a starch and iodine mix, silver nitrate, and water test reagents. These liquids are temporarily stored in a 5-gallon container in the laboratory and later hand carried to a 55-gallon drum in the drum storage area on the west side of the plant. Waste paint is stored in a 55-gallon drum in the drum storage area. Both streams are stored until enough waste has accumulated for disposal by Safety-Kleen.

EFFLUENT AND SOLID WASTE QUALITY CHARACTERISTICS

Commingled Effluent

On August 24, 1994, a grab sample of the commingled effluent was collected from a valve between the saltwater tank pump and the pipeline to the injection wells. Total dissolved solids (TDS), pH, general chemistry, chlorinated hydrocarbons (EPA Method 601 and EPA Method 504 for ethylenedibromide), aromatic hydrocarbons (EPA Method 602), and Resource Conservation and Recovery Act (RCRA) metals analysis of the effluent sample was conducted by Analytical Technologies, Inc. Laboratory results indicated that all commingled effluent constituents are below the WQCC 3-103 standards for groundwater except for benzene, toluene, and total xylenes, chloride, sulfate, and TDS. The concentrations of benzene, toluene, and total xylenes were 2800, 5600, and 2700 ug/l, respectively. The laboratory results are included in Appendix A.

Testing for polychlorinated biphenols (PCBs) was not necessary because PCB-contaminated transformers were removed from service at the gas plant before 1981. No other sources of PCB contamination have been identified to warrant testing for PCBs in the plant effluent.

Table 1 lists three plant effluents that contain one or more constituents as defined by WQCC Section 1-101.ZZ. These effluents are the produced water (Effluent No. 3), waste oil (Effluent No. 6) that drains into the open drain system, and groundwater contaminated with condensate (Effluent No. 10) which is transferred through an underground pipeline from the treatment compound to the fiberglass saltwater tank. One or more constituents as defined by WQCC Section 1-101.ZZ (benzene, toluene, ethylbenzene, M-, P-, and O-xylenes, and naphthalene) are contained in these effluents.

Solid Waste Quality Characteristics

Most solid wastes generated at the plant are not characterized by the definition in WQCC Section 1-101.ZZ. Table 2 classifies each waste as either exempt, nonexempt nonhazardous, or nonexempt potentially hazardous. All nonexempt wastes will be laboratory tested to determine the appropriate method of disposal. After the waste stream has been tested to determine the disposal method, the laboratory analysis will be kept on file at the gas plant. This analysis will

be used to characterize the waste stream for a one-year period. After the one-year period has expired, the waste stream will be retested to ensure that the disposal method is appropriate. Solid wastes will be stored and handled in accordance with all applicable federal and state laws.

TRANSFER AND STORAGE OF PROCESS FLUIDS AND EFFLUENTS

Onsite Collection and Storage Systems

The open drain and closed drain systems are used to manage some of the effluents at the plant. Table 1 indicates which effluents are conveyed in the open drain system. These include two of the boiler and condenser blowdowns (Effluent No. 5), several waste oils (Effluent No. 6), cleaning operation effluents (Effluent No. 7), and miscellaneous plant process effluents (Effluent No. 8). Figure 3 is a schematic of the plant open drain system and shows the location of the storage tanks where the commingled effluents are collected. The closed drain system is used to collect effluent from pressurized vessels.

Several other effluents, including produced water (Effluent No. 3), cooling tower blowdown (Effluent No. 4), certain boiler and condenser blowdowns (Effluent No. 5), softwater regeneration and reverse osmosis wastewater (Effluent No. 9), and groundwater contaminated with condensate (Effluent No. 10) are conveyed by underground piping. Table 5 lists the underground piping at the plant and the effluents contained within these pipelines.

Open Drain System

The open drain system collects plant effluent under atmospheric conditions. The underground part of this system includes: four double-walled fiberglass sumps; one single-walled fiberglass sump; two single-walled steel sumps (main boiler sump and LACT sump); steel collection pots; steel pipelines; and, polyethylene pipelines (Figure 3). The open drain system includes a total of nine underground sumps. The aboveground part of the system consists of concrete drainage and containment pads that collect and drain effluent into the underground part of the system for collection and disposal. Commingled effluent collected in the open drain system flows to the middle tank of the skimmer basin located in the southwest part of the plant. The skimmer basin consists of three, netted, open-top fiberglass tanks.

Description of Integrity Test of Open Drain System

Seven separate sections of underground piping are tested by filling the piping to volumetric capacity and visually observing any fluctuations in fluid levels at the sump and manway locations. The test is performed at atmospheric conditions for 5 hours. In order to reduce the effects of temperature fluctuations that occur during the heating and cooling part of the day, the test is

conducted in the early morning or late evening hours. All sources for active drainage are isolated to prevent accidental introduction of non-test fluids into the system. A successful test has been conducted when the initial fluid levels remain constant throughout the 5-hour test period. The double walled fiberglass sumps are integrity tested by filling the inner chamber to capacity and observing any leaking of fluid from the inner chamber to the outer chamber. A successful test of the double-walled sumps has occurred if fluid does not leak to the outer chamber from the inner chamber during the 5-hour test period.

A successful integrity test of two sections (i.e. main boiler sump and LACT sump) was conducted on May 24, 1994. Successful integrity tests of five other sections (i.e. generator, stabilizer compressor, air compressor, main, and glycol blowdown sumps) were conducted on September 8, 1994. On September 8, an integrity test of the inlet compressor sump demonstrated integrity at the normal operating effluent level, but failed to demonstrate integrity during high-level effluent conditions (i.e. during heavy rainfall events). A new double-walled, inlet compressor sump is being manufactured and is planned to be installed in November 1994 to ensure integrity of this section of the open drain system.

Closed Drain System

The closed drain was constructed in 1980 and modified in 1984 and is mainly aboveground. This system is used to collect effluent from pressurized vessels. The maximum operating pressure is 50 psig. The closed drain system is connected to 14 process vessels: filter separator, expander/compressor, amine contactor, glycol contactor, amine scrubber, glycol scrubber, amine flash tank, amine still, product contactor, new fuel gas scrubber, old fuel gas scrubber, regen scrubber, vertical inlet separator, and horizontal inlet separator. Steel piping leads from these process vessels to the fiberglass, closed blowdown drain tank located in the southwest part of the plant. Collected liquids in the tank are sent to the skimmer basin for recovery and then to the steel saltwater tank for disposal.

Water and Wastewater Flow

Figure 4 is a water and wastewater flow schematic showing individual treatment and process units.

Inventory of Tanks and Vessels

Tables 3 and 4 are lists of tanks and vessels, respectively, with a potential to discharge. Table 3 lists the 39 tanks at the plant. Most of the onground tanks are not constructed with impermeable secondary containment or leak detection. The sulfur tank is the only underground tank at the site. None of the onground tanks are constructed on gravel foundations (i.e. tank bottom leaks cannot be detected); therefore, these tanks are cleaned out and visually inspected

every five years. Table 3 indicates the scheduled inspection dates for each onground tank. Table 4 lists the separators, boilers, exchangers, condenser, scrubbers, and other vessels that are not constructed in impermeable secondary containment and would cause a discharge directly to the ground if the vessel leaked.

Measures to Prevent Unintentional and Inadvertent Discharges

Secondary Containment for Tanks

All storage tanks except those that contain uncontaminated freshwater are bermed to contain 133% of the volume of the largest tank. If two or more tanks are connected within the same containment, the berm contains 133% of the total volume of the interconnected tanks.

Chemical and Drum Storage Area Containment

All drum storage areas are concrete paved and curbed to prevent a potential discharge to the ground of leaking or spilled drum contents. The chemical storage area is scheduled for upgrading in 1995 to construct concrete paving and curbing to prevent leaks or spills from contacting the ground. The containment will be constructed to drain spilled or leaked fluids to a concrete sump built into the containment.

New and Existing Sump Inspection

Construction plans for installing new sumps will be submitted to the Oil Conservation Division (OCD) for approval prior to project commencement. All seven existing sumps are cleaned-out and visually inspected every year. The only below-grade tank at the plant is the sulfur underground storage tank.

Onground Tank Inspection

The lube oil storage, steel saltwater, glycol storage, 1200-barrel freshwater storage, and steel softwater tanks are on a concrete pad. Therefore, these tanks have leak detection. All other onground tanks are cleaned-out and inspected every five years. Table 3 indicates the clean-out and inspection schedule for the tanks.

Underground Pipelines

Table 5 lists 44 underground pipelines that convey either process or waste effluents within the plant. The name of the pipeline, where the fluids are transferred from and to, year of construction or modification, piping diameter, fabrication material, average throughput during use, operating pressure, and the date of the last or next scheduled integrity test of each pipeline

are indicated on Table 5. All pipelines that are 25 years of age or older are tested for mechanical integrity. The Marathon procedures for mechanical integrity testing are on file at the plant. The procedures are based upon the third edition (dated December 1993) of the American Petroleum Institute document RP 1110 entitled "Pressure Testing of Liquid Petroleum Pipelines."

Proposed Modifications

1994

1. Decommission the existing 90-barrel, steel softwater tank and replace it with a 280-barrel, fiberglass tank. Install a new water softener unit.

1995

1. Close the existing landfill pit located on the west side of the plant by burying the existing material in place. Existing material includes office trash (e.g. paper, wood, glass, miscellaneous) and filters (e.g. dried amine, glycol, fuel, and air). Future operations at the plant will not use an on-site landfill for disposal of office trash and exempt solid wastes. These wastes will be handled, stored, and disposed according to the waste inventory protocol identified in Table 2.

2. Installation of a reverse osmosis system complete with associated aboveground tankage.

3. Install a pipeline to convey groundwater to the landfarm. Install a water sprinkling system to maintain the moisture content at an optimum level in landfarm soils undergoing biologic treatment.

1996

1. Remove the three existing skimmer basin netted open-top tanks and install closed-top tanks with vapor recovery. The new tanks will be constructed inside concrete containment with concrete berms to contain 133% of the volume of the largest tank within the containment.

2. Construct a concrete containment pad with concrete berms to contain 133% of the combined volume for all the saddle tanks within the chemical and fuel storage area containment. Construct a separate concrete pad without containment for the methanol saddle storage tank.

3. Construct earthen secondary containment berms to contain 133% of the combined volume of the two interconnected overhead condensate storage bullet tanks.

1997

1. Construct earthen secondary containment berms to contain 133% of the combined volume of the two saltwater tanks and the softwater tanks.

EFFLUENT DISPOSAL

On-Site Operations

On-site Disposal

Surface impoundments or ponds, injection wells, leach fields, drying beds, or other pits do not exist on site. On-site disposal of liquid and solid waste effluents is limited to the solid waste landfill and two minor discharges. The latter are: 1) cooling tower effluent in the form of a spray or mist that is discharged to the ground around the base of the cooling tower; and, 2) solid sulfur is discharged onto the ground on the west side of the plant. Marathon no longer uses the solid waste landfill on site to dispose of exempt plant wastes and office trash. A scheduled improvement for 1995 is to close the landfill in place.

On-Site Treatment

On-site treatment is limited to treatment of hydrocarbon-contaminated (e.g oil, glycol, and amine) soil. Treatment is accomplished by either landfarming, commercial soil shredding, or commercial incineration. The latter two treatment options will be accomplished by an environmental service company in the landfarm area. Soil treated using these latter two methods will be treated to below the standards for soil to be reburied in Table 6. Vadose zone monitoring will not be performed if the soil is treated in aboveground equipment. The confirmation sampling frequency for the treated soils will be one sample per 50 yards of soil.

In the event commercial soil shredding or incineration treatment options prove to be technically effective and cost efficient, the landfarm may be closed. The staging area south of and adjacent to the landfarm would continue to be utilized for collection and storage of soil prior to commercial treatment.

- *Landfarm Construction, Operation, and Maintenance*
  Landfarming of exempt and nonexempt nonhazardous, hydrocarbon-contaminated soil occurs in an area on the west side of the plant (Figure 2). The landfarm area is approximately 100 by 300 feet square. A staging area for soil awaiting treatment borders the landfarm to the south and is approximately 100 by 100 feet square. The landfarm operates continuously throughout the year. The landfarm was originally constructed in

1989 with a 4-mil plastic liner with approximately 12-inch-high earthen berms on four sides. Runon protection is afforded by the stormwater berm immediately adjacent to the west side of the landfarm containment. Runoff protection, leachate collection, or leak detection were not incorporated into the landfarm design; however, the application of water by a sprinkler system (1995 proposed improvement) is limited so that ponding does not occur within the landfarm except during significant rainfall events.

Soil to be placed in the landfarm will not contain polychlorinated biphenols (PCBs) or heavy metals in hazardous concentrations as defined by the Toxicity Characteristic Leaching Procedure (TCLP). Exempt soil will be directly loaded into the landfarm; however, nonexempt soil will be tested for RCRA metals by total digestion and PCBs prior to loading unless source knowledge can eliminate these tests.

Normal operations may include the addition of nutrients, biomass, and groundwater. Frequent tilling of soil is required to reduce contaminant levels to below the cleanup standards.

Landfarmed soil is sampled periodically to determine whether cleanup standards have been achieved. Soil cleanup standards for TRPH, total BTEX, and benzene are determined by the proposed use of the soil following treatment. Table 6 outlines the proposed standards.

- Vadose Zone Monitoring, Sampling, and Notification

  In order to ensure that discharges to groundwater from the vadose zone beneath the landfarm will comply with standards in WQCC Section 3-103 and Section 1.101.ZZ, a randomly located, grab sample from immediately below the landfarm area will be collected each time treated soil is removed from the landfarm. The sample will be collected from an interval between six inches and one foot below grade. The sample will be collected according to EPA protocols and transported to an appropriate laboratory for TRPH (EPA Method 418.1) and BTEX (EPA Method 8020) analyses.

  If soil below the landfarm is found to contain TRPH or total BTEX concentrations above 100 mg/kg and 50 mg/kg, respectively, the OCD will be notified according to the notification requirements of WQCC Section 1-203. Marathon's seven-day written notification will contain a plan for the removal of soil from beneath the landfarm that exceeds these standards. If soil below the landfarm is not found to contain TRPH or total BTEX concentrations above 100 mg/kg and 50 mg/kg, respectively, then the landfarm will be reloaded and treatment of soil will continue. Laboratory analysis reports of the vadose zone sampling described above will be submitted to the OCD within 15 days of the transmittal date of the laboratory report.

Off-Site Disposal

Injection Wells

All exempt gas plant waste effluents are collected by the open drain system, closed drain system, or other underground piping, and commingled at either the fiberglass or steel saltwater tanks (Figure 2). The commingled effluent is conveyed by underground pipeline and discharged at two off-site locations. These are the two Marathon-operated Class II injection wells located on adjacent BLM property. The principal injection well is the Marathon Indian Basin Gas Com Well No. 1, located in the Northwest 1/4 of Section 23, T21S, R23E. Marathon Federal SWD Well No. 1, located in Unit K in the Southwest 1/4 of Section 24, T21S, R23E, is maintained as a backup well. The composition of the commingled effluent is identified on Table 1. Laboratory analysis of the commingled effluent is provided in Appendix A.

Municipal Landfill

All exempt and nonexempt nonhazardous solid wastes are placed in the dumpster on site and are disposed of in a municipal solid waste landfill. Potentially hazardous wastes (e.g., sludges, hydroblasting and sandblasting media, cooling tower cleaning waste solids, and nonexempt tank bottoms) are tested to determine the appropriate method of disposal. Nonexempt wastes determined to be hazardous by laboratory testing are handled and stored appropriately and disposed off site. Hazardous wastes may be temporarily stored on site for 270 days.

INSPECTION, MAINTENANCE, AND REPORTING

Marathon is actively involved in maintaining and improving spill and leak prevention procedures and good housekeeping practices. These goals are achieved by encouraging plant employees to be observant, to notify the appropriate persons of their observations, to correct problems quickly, and to prevent future spills and leaks by learning from problematic past practices.

Routine Inspection Procedures

Table 3 and 4 identify the aboveground storage tanks and process vessels (AST and APV; i.e., those in-air tanks and vessels that allow 360 degree visual inspection) that are routinely inspected. The closed drain system is also routinely inspected. Plant employees routinely inspect plant equipment (i.e. tanks, piping, pumps, fittings, valves, etc.) for leaks and spills during their daily work tasks. Four plant tours are conducted by plant personnel during each of three, eight-hour shifts. A primary objective of these tours is to detect equipment leaks and spills. The current Spill Prevention, Control, and Countermeasure (SPCC) plan dated December 28, 1992 is provided in Appendix B.

Routine Maintenance Procedures

Employees are encouraged to identify and report potential spill situations. All plant employees have completed an 8-hour hazardous waste operations and emergency response (HAZWOPER) training session. In addition, all employees participate in an annual refresher training course which includes instruction on spill prevention and control measures as required by the SPCC plan.

Routine Reporting Procedures

Small leaks or spills are reported and remediated immediately. A Marathon policy requires employees to complete a spill report upon discovery of a spill or leak. Spills or leaks are reported to the OCD according to the requirements of OCD Rule 116 and WQCC Regulations Section 1-203. BLM is notified if a spill or leak occurs on BLM land. The National Response Center is notified in accordance with 40 CFR 110.10. Spill reports are kept on file at the plant office.

Stormwater Runoff and Flood Protection

The potential for flooding of the plant is very low. Normally, flooding due to significant rainfall events is limited to the braided stream channels of Rocky Arroyo. The stream bed of Rocky Arroyo is approximately 10 feet lower than the elevation at the southern plant perimeter fence. The last time Rocky Arroyo overran its banks was in 1986, but the water did not reach the plant.

Perimeter diversion berms consisting of dirt, piled two- to three-feet high, are located on the west and north sides of the plant to prevent upgradient stormwater from running onto the plant site. These stormwater berms prevent stormwater from contacting hydrocarbons in containments or flooding the open drain system which is designed to manage normal process flow only.

The Indian Basin Gas Plant Stormwater Pollution Prevention Plan (SWPPP), dated March 31, 1993, is included in Appendix C. This document describes the potential pollutant sources, stormwater measures and controls, stormwater runoff management, inspection and preventative maintenance, spill prevention and response procedures, employee stormwater training, and recordkeeping and internal reporting procedures. Select employees participate in stormwater pollution prevention training on an annual frequency according to the requirements in the SWPPP.

SPILL/LEAK PREVENTION & REPORTING (CONTINGENCY PLANS)

A contingency plan for potential occurrence of leaks and spills at the Indian Basin Gas Plant is located in the SPCC plan which is included as Appendix B. The contingency plan describes the steps proposed to contain and remove spilled substances and mitigate the damage caused by the discharge including protection from future migration to groundwater. The OCD notification threshold levels for discharges at the plant as defined by WQCC Regulations Section 1-203 and significant leaks or spills as defined by OCD Rule 116.

SITE CHARACTERISTICS

Geologic Description of Discharge Site

The typical stratigraphic sequence beneath the gas plant is Queen Formation fractured sandstone, limestone, and dolomite bedrock at a depth of approximately 20 feet overlain by approximately 16 feet of silty, pebble to boulder gravel overlain by 4 feet of clayey silt and silt.

Hydrologic Features

Rocky Arroyo is a watercourse located approximately 600 feet south of the southern boundary of the site (Figure 1) that contains flowing water only during and for a period of time following heavy rainfall events. The main channel of Rocky Arroyo is 840 feet south of a fence at plant. South of the plant site, the stream channel of Rocky Arroyo trends southeast.

The first groundwater encountered below the plant site occurs within alluvium deposits. This shallow zone is perched above locally fractured, Permian sandstone, limestone, and dolomite of the Queen Formation. The presence of perched shallow groundwater is dependant on the amount of local rainfall. The flow direction of the perched shallow groundwater is generally southeast. A commercial supply well permitted by the State Engineer Office and completed in the shallow alluvial deposits is located approximately 2.5 miles east of the site boundary. The well is located where alluvial deposits are thick and downstream of the confluence of three major drainage channels in the southern Seven Rivers embayment. These are Rocky Arroyo, Martha Creek, and Dunnaway Draw.

A rancher well (Lee well) is located approximately 0.7 miles west of the western boundary of the 160-acre property and approximately 100 feet north of County Road 401 (Figure 1). This active well is permitted by the State Engineer Office as a stock supply well and is completed in the Lower Queen regional aquifer which is the next saturated zone below the shallow groundwater zone.

TABLES

Table 1. Effluents and Estimated Volumes

Effluent No./ Effluent	Conveyed From ? To ?	Waste Effluent Constituents	Volume	(Section 1-101.ZZ constituents)
1/ COMMINGLED EFFLUENT (INJECTION)	saltwater tanks to underground piping to injection wells	contains effluent No.'s 3, 4, 5, 6 (in part), 7, 8, 9, and 10	2000 Bbls/day	BTEX
2/ COMMINGLED EFFLUENT (OFF-SITE DISPOSAL)*	water trucks to commercial disposal wells	contains effluent No.'s 3, 4, 5, 6 (in part), 7, 8, 9, and 10	nonreccuring	BTEX

Constituents of Commingled Effluent and Estimated Volume

3/ PRODUCED WATER	inlet separetors to skimmer basin to saltwater tanks	condensate, saltwater	2000 Bbls/day	BTEX
4/ COOLING TOWER BLOWDOWN	aboveground piping to fiberglass saltwater tank	softwater make-up	200 Bbls/day	none
		Calgon conductor XLP-190	2.1 gal/day	none
		Westchem sulfuric acid	5 Bbls/mo	none
		Calgon Tower Brom 960 (solid)	100 lbs/mo	none
		Calgon CL-37	4 gal/mo	none
		Kjell Water Consultants Aquamag	12 ppm	none
5/ BOILER AND CONDENSER BLOWDOWNS				
SRU Waste Heat Boiler Blowdown	underground & aboveground steel pipeline to steel saltwater tan	softwater make-up	95 Bbls/day	none
SRU Large Condenser Blowdown	underground & aboveground steel pipeline to steel saltwater tan	Calgon Ultra Amine 120	3.6 gal/day	none
SRU Small Condenser Blowdown	glycol sump of open drain to steel saltwater tank	Calgon Burlock 2220	4.5 gal/day	none
Turbine Waste Heat Boilers (3) Blowdown	Open Drain System to skimmer basin	Calgon Conquor 3470	1.8 gal/day	none
Process (main) Steam Boiler Blowdown	Open Drain System to skimmer basin	Kjell Water Consultants Aquamag	3 ppm	none
6/ WASTE OIL				
vehicle motor oil	hand carried to 500-gal waste oil drum	Chevron Delo 400 SAE 30	10 gal/mo	none
crankcase oil (chemical injection pump)	hand carried to 500-gal waste oil drum	Mobil 600 W Cylinder Oil	1 gal/yr	none
crankcase oil (high pressure pumps)	open drain to skimmer basin	Texaco Meropa 220	15 gal/mo	toluene
regen compressor oil	open drain to skimmer basin	Chevron (& Texaco) ATF Dexron II	20-30 gal/yr	none
lubricating oil/ instrument air compressors	open drain to skimmer basin	Dow Chemical SSR Ultra Coolant	55 gal/yr	none
stabilizer vapors compressor oil	*open drain to skimmer basin*	Chevron Delo HD Motor SAE 30	250 gal/yr	none
turbine/ expander compressor oil (incldg recomprsr)	open drain to skimmer basin	Texaco Regal Oil R&O 32	6000 gal/yr	none
generator oil	open drain to skimmer basin	Chevron Turbine Oil GST ISO 68	350 gal/yr	none
inlet compressor oil	open drain to skimmer basin	Texaco Regal Oil R&O 32	3000 gal/yr	none
7/ CLEANING OPERATIONS	Open Drain to Skimmer Basin to Saltwater Tank to Injection		200 Bbl/yr	
steam cleaning				
truck, tank, and drum washing				
hydroblasting cooler fins				
hydroblasting heat exchangers				
8/ MISC. PLANT PROCESS EFFLUENTS	Open Drain to Skimmer Basin to Saltwater Tank to Injection		75 Bbls/day	
product sweetening		Texaco diethanolamine (DEA)		none
glycol		*Dow Chemical triethylene glycol (TEG)*		none
9/ SOFTWATER REGEN & REVERSE OSMOSIS WASTEWATER	softwater building to saltwater tank via underground piping	saltwater	75+310 Bbls/d	none
		Kjell Water Consultants Aquamag	3 ppm	none
		Salt (NaCl)		none
10/ GROUNDWATER CONTAMINATED W/ CONDENSATE**	freshwater gathering to saltwater tank via underground piping	freshwater	2575 Bbls/day	none
		Kjell Water Consultants Aquamag	3 ppm	none
		condensate (as TPH; EPA Mod. 8015)	<3,200 ug/L	BTEX

* emergency off-site disposal only

** occasional practice

Other Effluents and Estimated Volumes

11/ PLANT SUPPLY WELL (SW-1) GROUNDWATER	SW-1 to landfarm via underground pipeline	freshwater	137 Bbls/day	none
		Kjell Water Consultants Aquamag	3 ppm	none
		condensate	<100 ug/L	TEX
12/ DOMESTIC SEWAGE (not commingled)	pipeline and septic tank to leech field	none	200 gal/wk	none

Table 2. Waste Sources, Estimated Volumes, and Waste Classification

WASTE	Volume	Waste Classification	Treatment/ Disposal Method	Disposal Location	Plant Storage Location
1/ INLET AIR FILTERS (turbine, recompressors, generators) & COMPRESSED AIR FILTERS	610 filters/yr	nonexempt nonhazardous	dumpster	Carlsbad municipal landfill	west side plant
2/ NATURAL GAS FILTERS	100 filters/yr	exempt	dumpster	Carlsbad municipal landfill	west side plant
3/ TURBINE LUBE OIL FILTERS	20 filters/yr	nonexempt nonhazerdous	dry on drying rack; dumpster	Carlsbad municipal landfill	west side plant
4/ SPENT MOLECULAR SIEVE	approx. 4000 lbs/5 yrs	exempt	landfill	exempt waste facility	roll-off bin
5/ GLYCOL CERAMIC SADDLES	3 drums/ 2 yrs	exempt	landfill	exempt waste facility	drum storage area
6/ GLYCOL & AMINE FILTERS & FILTER MEDIA					
glycol sock filters	25 filters/yr	exempt	dry on drying rack; dumpster	Carlsbad municipal landfill	west side plant
amine charcoal filters	70 filters/yr	exempt	dry on drying rack; dumpster	Carlsbad municipal landfill	west side plant
amine bag filters	60 filters/yr	exempt	dry on drying rack; dumpster	Carlsbad municipal landfill	west side plant
7/ SULFUR RECOVERY UNIT USED CATALYST & SUPPORT BALLS	15 tons/ 5 yrs	exempt	landfill	exempt waste facility	NA
8/ SULFUR-CONTAMINATED SOIL	5 yds/yr	exempt	land discharge	west side of SRU , west of fence	NA
9/ SOIL CONTAINING HYDROCARBONS & SOIL ASSOCIATED W/ COMPRESSORS	1500 yds/yr	exempt & nonexempt	landfarming/ bioremediation	plant landfarm	landfarm staging area
10/ OILY RAGS	30 boxes/yr	exempt & nonexempt	dry on drying rack; dumpster	Carlsbad municipal landfill	west side plant
11/ WATER SOFTENING RESIN, CHARCOAL FILTER, ACTIVATED & NONACTIVATED CARBON	28 ft3/ yr	exempt	landfarming/ bioremediation	plant landfarm	drum storage area
12/ USED VEHICLE TIRES	various	nonexempt nonhazerdous	recycle	Forrest Tire, Artesia, NM	
13/ OFFICE AND PLANT TRASH	15 yds/ wk	nonexempt nonhazerdous	dumpster	Carlsbad municipal landfill	west side plant
14/ STABILIZER COMPRESSOR/ AIR COMPRESSOR LUBE OIL FILTERS	16 filters/yr	nonexempt, potentially hazerdous	dry on drying rack; dumpster	Carlsbad municipal landfill	west side plant
15/ HYDROBLASTING & SANDBLASTING MEDIA	500 lbs/ yr	nonexempt, potentially hazerdous	as dictated by sampling	as dictated by sampling	NA
16/ NATURALLY OCCURRING RADIOACTIVE MATERIAL (NORM)	50 Bbls/ yr	NORM waste	unknown pending State Regulation	unknown	NORM storage area 1 & 2
17/ TANK, SEPARATOR, PROCESS VESSEL BOTTOMS & SUMP SLUDGE	200 Bbls/ yr	NORM waste	unknown pending State Regulation	unknown	NORM storage area 2
18/ COOLING TOWER CLEANING WASTE SOLIDS	80 Bbls/ 2 yrs	nonexempt, potentially hazerdous	injection; off site Class II well	I&W Services, Artesia, NM	frac tank until testing complete
19/ USED BATTERIES (generator, backup lighting, and vehicle)	40 batteries/ yr	nonexempt, potentially hazerdous	recycle	Marsh Pipe & Supply, Artesia, NM	drum storage area
20/ PAINT WASTE SOLIDS (cans, dried paints)	1 drum/ yr	nonexempt, potentially hazerdous	incinerated; supplemental fuel	Safety-Kleen determines	drum storage area
21/ USED DRUMS	12 drums/ yr	nonexempt, potentially hazerdous	recycle	NA	drum storage area
22/ SAFETY-KLEEN 105 SOLVENT-MS	1 Bbl/month	nonexempt hazerdous	recycle	NA	pumper shack; 55-gallon drum
23/ LABORATORY WASTES (starch and iodine, silver nitrate, water test reagents)	10 gal/yr	nonexempt, potentially hazerdous	incinerated	Safety-Kleen determines	drum storage area
24/ WASTE PAINT	1 Bbl/yr	nonexempt, potentially hazerdous	incinerated	Safety-Kleen determines	drum storage area

NA = not applicable

Table 3. Inventory of Tanks

Source/ "Figure 3" location	Tank Volume	Type	Bottom Lined?	Effluent Contained	Fluids Drained to ?	Scheduled Clean-out
condensate tank (bullet)/ SE plant	1700 Bbl	npAST	in air; NA	NA	condensate tank (bullet) SE plant	NA
condensate tank (bullet)/ SE plant	1700 Bbl	npAST	in air; NA	NA	LACT unit	NA
tank (bullet)/ SE plant (not in service)	1700 Bbl	npAST	in air; NA	NA	NA	NA
tank (bullet)/ SE plant	1700 Bbl	pAST	in air; NA	NGL	rerun line	NA
tank (bullet)/ SE plant	1700 Bbl	pAST	in air; NA	NGL	rerun line	NA
tank (bullet)/ SE plant	1700 Bbl	pAST	in air; NA	NGL	rerun line	NA
lube oil tank/ recompressor	210 Bbl	npOST	concrete	NA	recompressor & expander surge tanks	not required
lube oil saddle tank/ inlet compressor	52 Bbl	npAST	in air; NA	NA	Open Drain main sump	NA
3 open-top skimmer tanks/ skimmer basin	3x100 Bbl	npOST	no	wastewater	saltwater tanks	Jun-1997
open-top skimmer tank/ skimmer pit	437 Bbl	npOST	no	wastewater	middle skimmer tank	Jun-1997
saltwater tank (steel)/ SW plant area	1000 Bbl	npOST	concrete	to injection	saltwater tanks	Jun-1997
saltwater tank (fiberglass)/ SW plant area	500 Bbl	npOST	no	to injection	saltwater tanks	Jun-1997
lube oil saddle tank/ stabilizer compressor	11.9 Bbl	npAST	in air; NA	NA	containment	NA
diesel tank/ north plant area	10 Bbl	npAST	in air; NA	diesel	delivery hose	NA
Meropa tank/ SW plant area	100 gal	npAST	in air; NA	Meropa oil	containment	NA
waste oil tank/ west plant area	500 gal	npAST	in air; NA	waste & slop oils	concrete containment	NA
condensate tank/ treatment compound	210 Bbl	npOST	no	cond. contam. water	equalization tank	Jun-1998
equalization tank/ treatment compound	210 Bbl	npOST	no	cond. contam. water	air stripper	Jun-1998
freshwater steel tank/ NE plant area	1200 Bbl	npOST	concrete	freshwater	ground	not required
freshwater fiberglass tank/ NE plant area	125 Bbl	npOST	no	freshwater	ground	not required
softwater tank/ SW plant area	90 Bbl	npOST	concrete	freshwater	ground	not required
reverse osmosis freshwater tank/ SW plant	280 Bbl	npOST	no	freshwater	ground	not required
glycol steel tank/ SW plant area	90 Bbl	npOST	concrete	softwater, Aquamag	ground	Jun-1997
sulfur tank/ NW plant area	47,000 gal	npUST	no	liquid sulfur	sulfur loading rack	
Large DEA Slop Tank*	200 Bbl	npAST	in air; NA	used DEA; Meropa oil	DEA to process; oil to Open Drain	NA
Small DEA Slop Tank*	70 Bbl	npAST	in air; NA	used DEA; Meropa oil	DEA to process; oil to Open Drain	NA
Burolock 2220 Storage Tank	1000 gal	npAST	in air; NA	Calgon Burolock 2220	boiler water treatment	NA
Ultramine 120 Storage Tank	1000 gal	npAST	in air; NA	Calgon Ultramine 120	boiler water treatment	NA
Conquor 3470 Storage Tank	1000 gal	npAST	in air; NA	Calgon Conquor 3470	boiler water treatment	NA
DEA Storage Tank #8*	3000 gal	npAST	in air; NA	new DEA	sweetening process	NA
DEA Storage Tank #9*	4200 gal	npAST	in air; NA	new DEA	sweetening process	NA
TEG Storage Tank	750 g	npAST	in air; NA	TEG	impermeable containment to be constructed	NA
TEG Storage Tank	500 g	npAST	in air; NA	TEG	impermeable containment to be constructed	NA
Methanol Storage Tank	500 g	npAST	in air; NA	Methanol	impermeable containment to be constructed	NA
Methanol Storage Tank	650 g	npAST	in air; NA	Methanol	impermeable containment to be constructed	NA
Varsol Storage Tank	400 g	npAST	in air; NA	Varsol	impermeable containment to be constructed	NA
Gasoline Storage Tank	2500 g	npAST	in air; NA	Gasoline	impermeable containment to be constructed	NA
Kerosene Storage Tank	400 g	npAST	in air; NA	Kerosene	impermeable containment to be constructed	NA
Antifreeze Storage Tank	500 g	npAST	in air; NA	Ethylene Glycol antifreeze	impermeable containment to be constructed	NA

npAST = nonpressurized aboveground storage tank (i.e. 360 degree inspection possible)

npOST = nonpressurized onground storage tank (i.e. bottom cannot be inspected w/o entry)

NA = not applicable

npUST = nonpressurized underground storage tank

pAST = pressurized aboveground storage tank

* connnected

Table 4. Inventory of Process Vessels

Source/ "Figure 3" location	Volume (Bbls)	Vessel Type	Vessel Bottom Lined?/ Ground Underneath Paved?	Contents	Fluids Drained To ?
water exchanger/ gas inlet	28	APV	in air/ no	cooling tower water	abandoned OD
inlet gas separator #1/ gas inlet	90	APV	in air/ no	produced water	CD
inlet gas separator #2/ gas inlet	32	APV	in air/ yes, conc. foundation pad	produced water	CD
air receiver/ gas inlet	1	APV	in air/ yes, conc. foundation pad	atmospheric water	bucket
inlet separator/ inlet compressor	75	APV	in air/ no	produced water	OD
suction scrubber/ inlet compressor	58	APV	in air/ yes, conc. foundation pad	produced water	OD
air receiver/ inlet compressor	3	APV	in air/ yes, conc. foundation pad	atmospheric water	bucket
amine contactor/ amine sweetening	324	APV	in air/ yes, conc. foundation pad	produced water, amine	CD
amine contactor overhead gas scrubber/ amine sweetening	8	APV	in air/ yes, conc. foundation pad	produced water, amine	CD
rich amine flash tank/ amine sweetening	76	APV	in air/ no	produced water, amine	amine bag filter
amine bag filter/ amine sweetening	2	APV	in air/ yes	produced water, amine	OD & rich-lean amine exchanger
condensate stabilizer overhead condenser/ amine sweetening	2	APV	in air/ no	produced water	aerial cooler to stabilizer reflux dru
amine still condenser/ amine sweetening	2	APV	in air/ no	produced water	aerial cooler to reflux accumulator
lean amine-water plate exchanger/ amine sweetening	2	APV	in air/ yes	produced water, amine	OD
rich-lean amine exchanger/ amine sweetening	22	APV	in air/ no	amine	amine still
amine still/ amine sweetening	300	APV	in air/ yes, conc. foundation pad	reflux water, amine	CD
amine reflux accumulator/ amine sweetening	8	APV	in air/ yes, conc. foundation pad	reflux water, amine	CD
amine still reboiler/ amine sweetening	19	APV	in air/ no	reflux water, amine	steam condensate surge tank
steam condensate surge tank/ amine sweetening	50	APV	in air/ no	condensed steam water	CD
amine charcoal filter/ amine sweetening	6	APV	in air/ yes, conc. pad	amine	slop amine tank
glycol water exchanger/ glycol dehydration	2	APV	in air/ no	produced water, glycol	
glycol contactor/ glycol dehydration	205	APV	in air/ yes, conc. foundation pad	produced water, glycol	CD
glycol contactor overhead scrubber/ glycol dehydration	8	APV	in air/ yes, conc. foundation pad	produced water, glycol	CD
glycol regenerator/ glycol dehydration	73	APV	in air/ no	produced water, glycol	atmosphere
rich-lean glycol exchanger/ glycol dehydration	59	APV	in air/ no	glycol	glycol contactor
glycol surge tank/ glycol dehydration	16	APV	in air/ no	produced water, glycol	OD
water collection drum/ glycol dehydration	3	APV	in air/ yes	steam, glycol	OD

APV = aboveground process vessel (i.e. 360 degree inspection possible)

OD = Open Drain

CD = Closed Drain

Table 4 (continued). Inventory of Process Vessels

Source/ "Figure 3" location	Volume (Bbls)	Vessel Type	Vessel Bottom Lined?/ Ground Underneath Paved?	Contents	Fluids Drained To ?
inlet water separator/ inlet condensate	291	APV	in air/ no	produced water, cond.	aband. OD
stabilizer feed tank/ inlet condensate	291	APV	in air/ no	produced water, cond.	OD
regeneration gas scrubber/ regeneration gas	10	APV	in air/ yes, conc. foundation pad	produced water	CD
product contactor/ product treating	128	APV	in air/ yes, conc. foundation pad	amine, KOH	buckets
product solvent separator/ product treating	16	APV	in air/ yes	amine	rich amine flash tank
acid gas scrubber #1/ SRU	11	APV	in air/ no	reflux water	amine reflux accumulator
acid gas scrubber #2/ SRU	11	APV	in air/ no	reflux water	amine reflux accumulator
small condenser/ SRU	20	APV	in air/ no	cooling tower water	OD
large condenser/ SRU	59	APV	in air/ no	cooling tower water	CD
Line 1, 3-phase separator/ inlet pit	20	APV	in air/ no	produced water, cond.	skimmer basin
Line 3, 3-phase separator/ inlet pit	14	APV	in air/ no	produced water, cond.	skimmer basin
Line 4, 3-phase separator/ inlet pit	36	APV	in air/ no	produced water, cond.	skimmer basin
cond. stabilizer feed-bottoms exchanger/ cond. stabilization	5	APV	on ground/ no	condensate	cond. stabilizer tower or cooler
condensate stabilizer reboiler/ cond. stabilization	10	APV	in air/ no	cond., steam	OD
condensate stabilizer/ cond. stabilization	119	APV	on ground/ yes, concrete pad	condensate	OD
stabilizer reflux drum/ cond. stabilization	10	APV	on ground/ yes, concrete pad	cond, reflux water	OD
stabilizer bottoms cooler/ cond. stabilization	1	APV	in air/ no	cond	cond. storage tanks
steam waste heat boiler #1/ steam system	71.4	APV	in air/ no	softwater w/ additives	OD
steam waste heat boiler #2/ steam system	71.4	APV	in air/ no	softwater w/ additives	OD
steam waste heat boiler #3/ steam system	71.4	APV	in air/ no	softwater w/ additives	OD
blowdown drum/ steam system	11.9	APV		softwater w/ additives	OD
main boiler/ steam system	35.7	APV	in air/ no	softwater w/ additives	OD
utility flare drum/ plant flare system		APV	in air/ no	gas	flare
inlet gas flare drum/ plant flare system	61	APV	in air/ no	produced water, cond.	condensate inlet line
stabilizer compressor suction scrubber	2	APV	in air/ concrete pad	condensate	OD
stabilizer compressor		comp	concrete pad with berm	water/ lube oil	OD
inlet compressor		comp	concrete pad with berm	water/ lube oil	OD

APV = aboveground process vessel (i.e. 360 degree inspection possible)

comp = compressor

cond. = condensate

OD = Open Drain

CD = Closed Drain

Table 5. Underground Piping

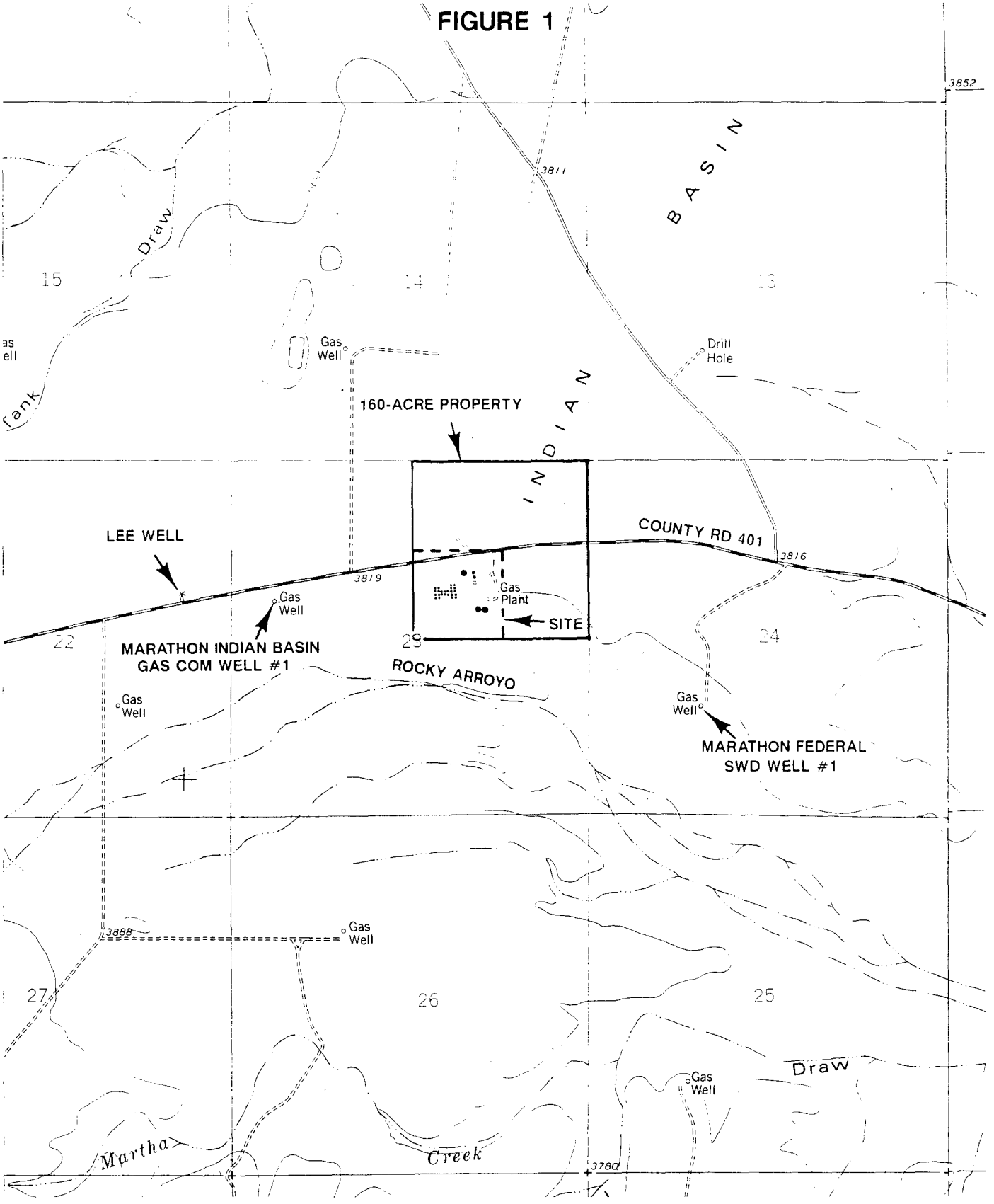
Piping Name	Conveyed From ? To ?	Year Constructed or Modified	Average Flow Rate (Bbls/day)	Pressure (psig)	Piping Diameter (in)	Piping Type	Last/ Scheduled Integrity Test
1/ open drain system	various plant units to middle, open-top tank of skimmer basin	1966, 1994	15	no	3	steel, PVC	Sep-1994
2/ softwater regeneration & reverse osmosis wastewater piping	water softener in water treatment building to steel saltwater tank	before 1990	385	15	2	PVC	before Jan-2015
3/ untreated groundwater bypass piping	diversion valve at treatment compound to fiberglass saltwater tan	1991	2575	50	2	poly	Jan-2016
4/ treated groundwater piping	air stripper at treatment compound to landfarm sprinkler system	1995			2	poly	Jan-2020
5/ piping to Marathon Federal SWD Well No. 1 (Sec. 24)	fiberglass saltwater tank to injection well	1977	minimal	2000	3	steel	Jan-2002
6/ piping to Marathon Indian Basin Gas Com Well No. 1 (Sec. 23)	fiberglass saltwater tank to injection well	1991	3000	2000	3	fiberglass	Jan-2016
7/ waste effluent transfer piping	skimmer pit to skimmer basin	1990	10	<10	3 and 2	PVC	Jan-2015
8/ waste effluent transfer piping	main sump to skimmer basin	1986	80	<30	4	steel	Jan-2011
9/ waste effluent transfer piping	skimmer basin to steel saltwater tank	1991	2000		3	poly	Jan-2016
10/ Condensate Delivery Sales	condensate bullet storage tanks (2) to condensate loading area (LA	1993	300	70	4	poly	Mar-1993
11/ SRU waste heat boiler & large condenser blowdown discharge piping	waste heat boiler and large condenser to steel saltwater tank	1965/ 1992	10		2	steel	Jan-2017
12/ condensate make line	stabilizer to condensate bullet storage tanks	1989	300	<20	2	steel	Jan-2014
13/ condensate rerun line	condensate bullet storage tanks to overhead pipe rack	1989	10; 100 max	<35	2	steel	Jan-2014
14/ LACT sump pump to main boiler sump	LACT sump pump to main boiler sump	1966/ 1989	1	<30	2	steel/poly	Jan-2014
15/ inlet condensate line	inlet valve pit to overhead pipe rack	1990	350	40	4	steel	Jan-2015
16/ divert line	inlet valve pit to condensate bullet storage tanks	1993	1	15	2	steel	Jan-2018
17/ produced water line	inlet valve pit to skimmer basin	1993	1500	40	2	poly	Jan-2018
18/ product skimmer recovery line	skimmer basin to inlet condensate line	1986	20	40	2	steel	Jan-2011
19/ dump line	stabilizer feed tank & generator to skimmer basin	1992	50	30	3	poly	Jan-2017
20/ injection line	fiberglass saltwater tank to pump suction header	1988	3000	10	4	steel	Jan-2013
21/ skimmer basin to fiberglass saltwater tank	skimmer basin to fiberglass saltwater tank	1989	50	8	2	steel	Jan-2014
22/ SRU Steam Condensate Return		1984	10	40	2	steel	Jan-2009
23/ Cryo Closed Drain		1980	5	100	4	steel	Jan-2005
24/ Amine System Closed Drain		1986	<1	100	3	steel	Jan-2011
25/ Horizontal H.P. Inlet Scrubber Closed Drain		1965	1	100	2	steel	Dec-1994
26/ WHB Blowdown		1991	65	100	2	steel	Jan-2016
27/ Main Boiler Blowdown to Sump	main boiler to sump	1990	15	100	2	steel	Jan-2015
28/ Boiler Sump Pump to Main Sump Pump Discharge	boiler sump pump to main sump pump discharge	1980	80	30	2	steel	Jan-2005
29/ Stabilizer Compressor Dump		1982	15	270	1	steel	Jan-2007
30/ Inlet Condensate Divert Line to the Transfer Tank	Inlet Condensate Divert Line to the Transfer Tank	1986	1	40	2	steel	Jan-2011
31/ Line 4 Metering Separator Inlet		1993	500	40	4	steel	Jan-2018
32/ Line 3 & 4 Metering Separator Oil Dump Line to Inlet Condensate Line	Line 3&4 Metering Separator Oil Dump Line to Inlet Cond. Line	1993	200	30	3	steel	Jan-2018
33/ Inlet Compressor Suction Scrubber (H&V) Dump Lines to Inlet Metering Separat	Inlet Cmprsr Suctn Scrubbr (H&V) Dump Lines to Inlet Metering S	1988	3	150	2	steel	Jan-2014
34/ Recompressor & Expander Lube Oil Makeup Line		1980	<1	5	1	steel	Jan-2005
35/ Amine Load Line to Storage Tanks	Amine Load Line to Storage Tanks	1965	1	5	2	steel	Dec-1994
Underground Amine Lines Tied to Valve "Octopus" From:							
36/ little slop		1988	1	5	2	steel	Jan-2013
37/ flash tank		1988	1	80	2	steel	Jan-2013
38/ bag filters		1988	<1	80	2	steel	Jan-2013
39/ charcoal filters		1988	<1	80	2	steel	Jan-2013
40/ reflux pumps		1988	1	20	2	steel	Jan-2013
41/ Amine Storage Tank 8		1988	1	5	2	steel	Jan-2013
42/ Amine Storage Tank 9		1988	1	5	2	steel	Jan-2013
43/ Glycol Load Line to Storage Tank	Glycol Load Line to Storage Tank	1965	1	5	2	steel	Dec-1994
44/ Inlet Gas Separators Dump Valves to Inlet Condensate Line	Inlet Gas Separators Dump Valves to Inlet Condensate Line	1965	5	40	2	steel	Dec-1994

Table 6. Landfarm Cleanup Standards

Use of Treated Soil	Cleanup Standards (mg/kg)		
	TRPH (EPA 418.1)	total BTEX	Benzene
Reburied	100	50	10
Stormwater control dikes	1000	50	10
Secondary containment berms in the gas plant	3000	50	10
Roadspread or patching lease roads	3000	50	10
Pad dirt on production locations	3000	50	10

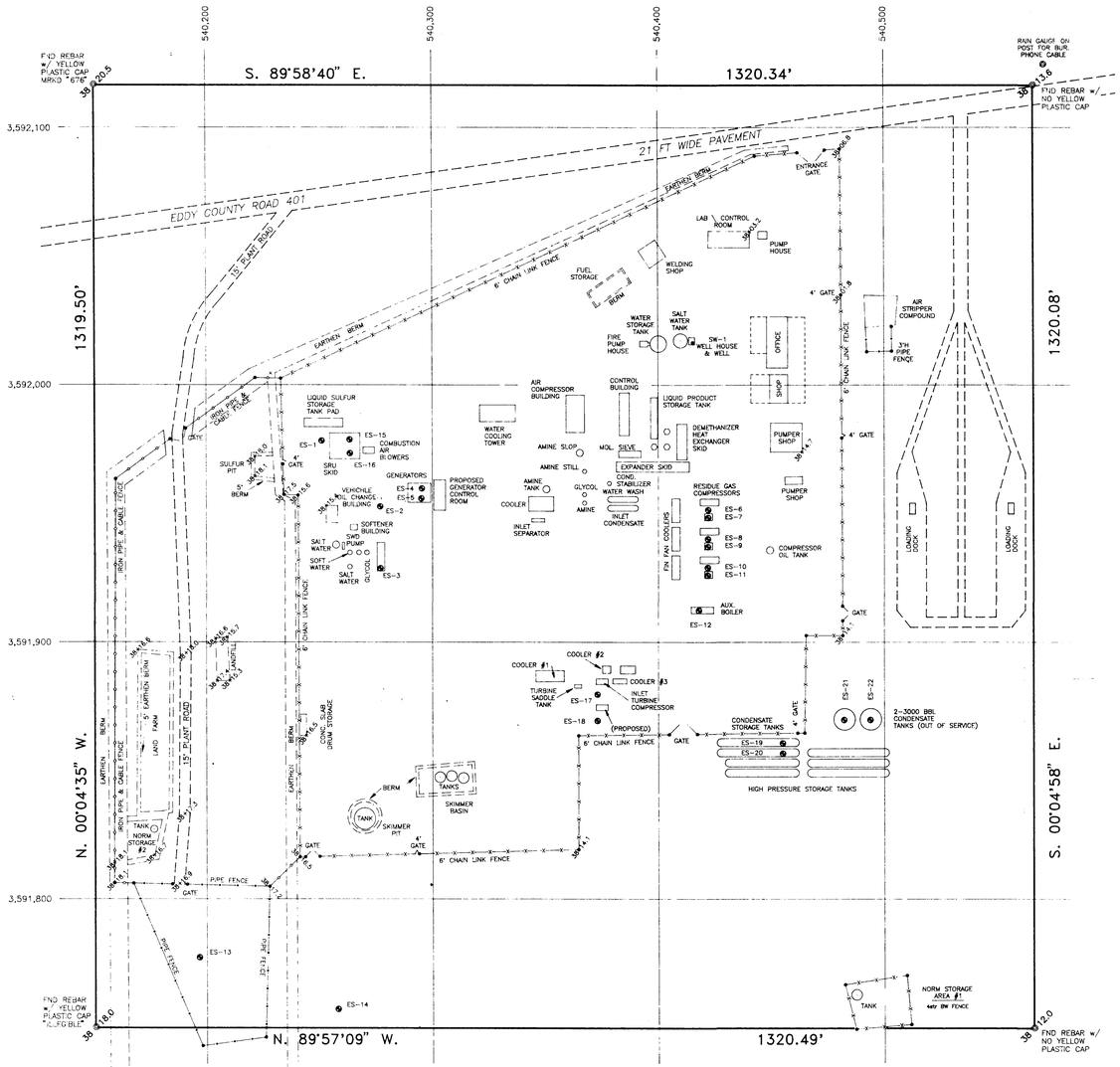
FIGURES

FIGURE 1


3852
3811
BASIN
INDIAN
Draw
15
14
13
Gas Well
Drill Hole
160-ACRE PROPERTY
LEE WELL
COUNTY RD 401
3816
3819
Gas Well
Gas Plant
SITE
22
28
24
MARATHON INDIAN BASIN GAS COM WELL #1
ROCKY ARROYO
Gas Well
Gas Well
MARATHON FEDERAL SWD WELL #1
3888
Gas Well
27
26
25
Gas Well
Draw
Martha
Creek
3780

SW/4 NE/4 SECTION 23, TOWNSHIP 21 SOUTH, RANGE 23 EAST, NMPM,

EDDY COUNTY, NEW MEXICO



EMISSION POINT	DESCRIPTION	LATITUDE	LONGITUDE	GROUND ELEV.	HEIGHT OF STACK	UTM COORDINATES (IN METERS) NORTH	EAST
ES-1	SULFUR TAIL GAS	32°27'57.5"	104°34'18.1"	3810.7	122 FT	3,591,978.6	540,250.8
ES-2	REGENERATION GAS HEATER	32°27'57.6"	104°34'17.1"	3808.9	77 FT	3,591,951.0	540,277.1
ES-3	GLYCOL REGENERATOR	32°27'55.8"	104°34'17.1"	3808.9	30 FT	3,591,926.3	240,277.1
ES-4	PROPOSED GENERATOR STACK	32°27'56.9"	104°34'16.4"	3808.9	18 FT	3,591,960.6	540,295.4
ES-5	GENERATOR STACK	32°27'56.8"	104°34'16.4"	3808.9	18 FT	3,591,957.6	540,295.4
ES-6	COMPRESSOR STACK	32°27'56.6"	104°34'11.5"	3806.7	28 FT	3,591,951.6	540,423.2
ES-7	COMPRESSOR STACK	32°27'56.5"	104°34'11.5"	3806.7	28 FT	3,591,948.5	540,423.2
ES-8	COMPRESSOR STACK	32°27'56.2"	104°34'11.5"	3806.7	28 FT	3,591,939.2	540,423.3
ES-9	COMPRESSOR STACK	32°27'56.1"	104°34'11.5"	3806.7	28 FT	3,591,936.2	540,423.3
ES-10	COMPRESSOR STACK	32°27'55.9"	104°34'11.5"	3806.7	28 FT	3,591,930.0	540,423.3
ES-11	COMPRESSOR STACK	32°27'55.8"	104°34'11.5"	3806.7	28 FT	3,591,926.9	540,423.3
ES-12	AUXILIARY BOILER	32°27'55.3"	104°34'11.7"	3806.4	19 FT	3,591,911.5	540,418.2
ES-13	FLARE No. 2	32°27'50.9"	104°34'20.2"	3812.2	167 FT	3,591,775.1	540,196.8
ES-14	FLARE No. 1	32°27'50.2"	104°34'17.9"	3810.8	67 FT	3,591,753.8	540,257.0
ES-15	NORTH SRU SALT BATH HEATER STACK	32°27'57.5"	104°34'17.6"	3809.7	34 FT	3,591,978.6	540,263.9
ES-16	SOUTH SRU SALT BATH HEATER STACK	32°27'57.3"	104°34'17.6"	3809.7	34 FT	3,591,972.5	540,263.9
ES-17	INLET COMPRESSOR STACK	32°27'52.3"	104°34'13.5"	3807.0	20 FT	3,591,818.9	540,371.6
ES-18	PROPOSED INLET COMPRESSOR STACK	32°27'52.1"	104°34'13.5"	36807.0	20 FT	3,591,812.8	540,371.6
ES-19	CONDENSATE STORAGE	32°27'53.6"	104°34'10.3"	3806.0	27 FT	3,591,859.3	540,454.9
ES-20	CONDENSATE STORAGE	32°27'53.5"	104°34'10.3"	3806.0	27 FT	3,591,856.2	540,454.9
ES-21	CONDENSATE STORAGE	32°27'53.9"	104°34'09.4"	3805.3	30 FT	3,591,868.6	540,478.9
ES-22	CONDENSATE STORAGE	32°27'53.9"	104°34'09.0"	3805.3	30 FT	3,591,868.7	540,488.8

NOTE:

LATITUDE, LONGITUDE, and UTM COORDINATES ARE BASED ON ZONE 13, CLARKE 1866 ELIPSOID, NAD 1927.

ES-21 and ES-22 ARE OUT OF SERVICE

100 0 100 200 300 Feet

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

JOHN W. WEST, N.M. P.E. & P.S. No. 676
TEXAS P.L.S. No. 1138
RONALD J. EIDSON, N.M. P.S. No. 3239
TEXAS P.L.S. No. 1883
GARY G. EIDSON, TEXAS R.P.L.S. No. 4735

MARATHON OIL COMPANY

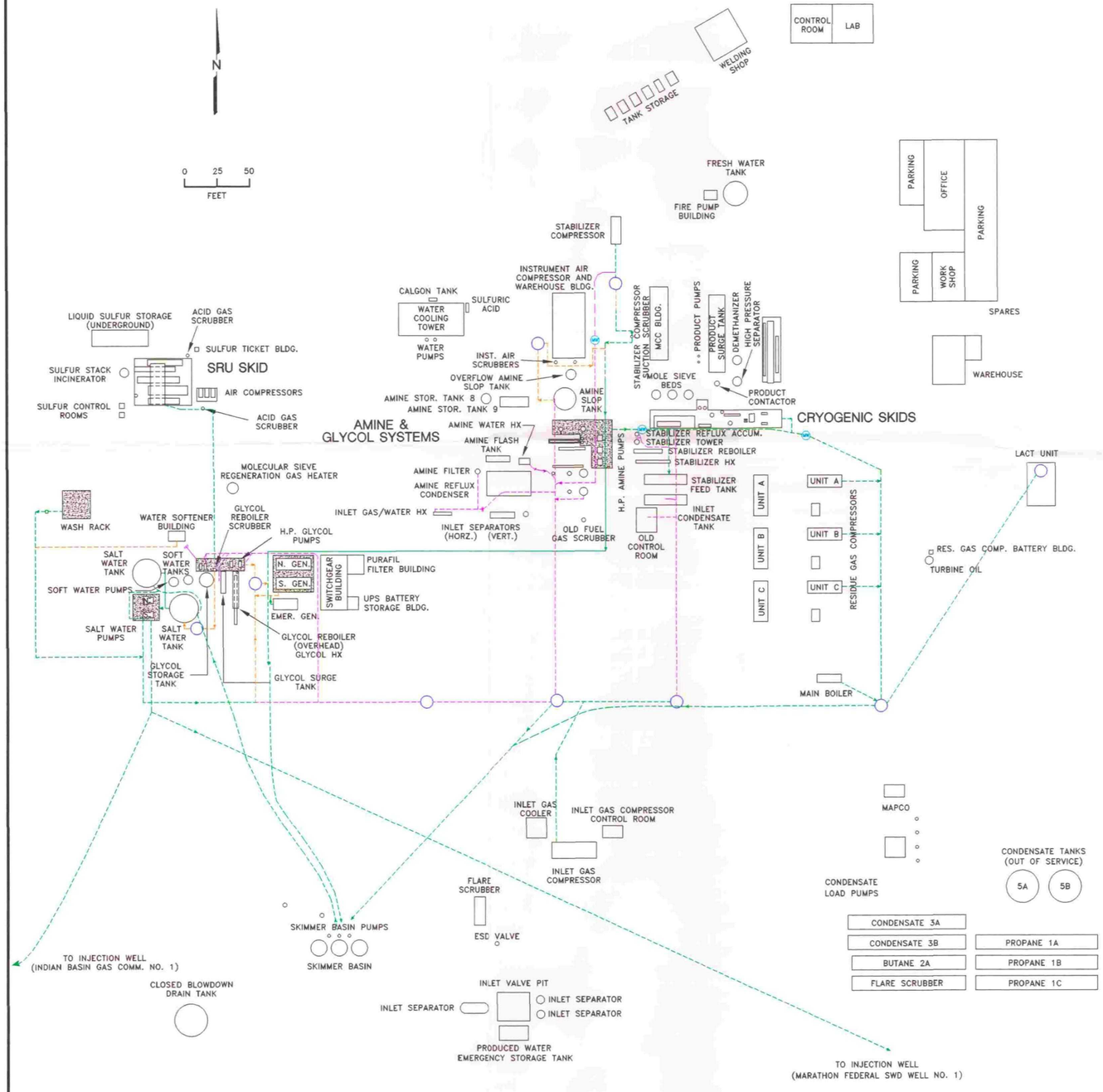
TOPO OF THE INDIAN BASIN GAS PLANT IN SECTION 23, TOWNSHIP 21 SOUTH, RANGE 23 EAST, NMPM, EDDY COUNTY, NEW MEXICO.

Fig. 2

JOHN WEST ENGINEERING CO.

CONSULTING ENGINEERS & SURVEYORS — HOBBS, NEW MEXICO

Surveyed By: B. Mahan	Drawn By: J. Holmes	Last Rev. Date: 9-19-94		Drawing Number
Date Begin: 8-24-94	Date: 9-21-94	Disk: JH No. 73		E-2558-1
Date End: 8-26-94	Approved By: G.E.	Sheet 1 of 1 Sheets		
W.O. Number: 94-11-1509	File Name: C:\NM-ROW\MOC1509P			



EXISTING DRAIN LINES (ABOVE GROUND)
EXISTING DRAIN LINES (BURIED)
1994 INSTALLATIONS (BURIED)
PIPING NOT IN SERVICE (BURIED)
DRAIN SUMPS
DRAIN MANWAYS

Marathon Oil Company
Midland, Texas 79701

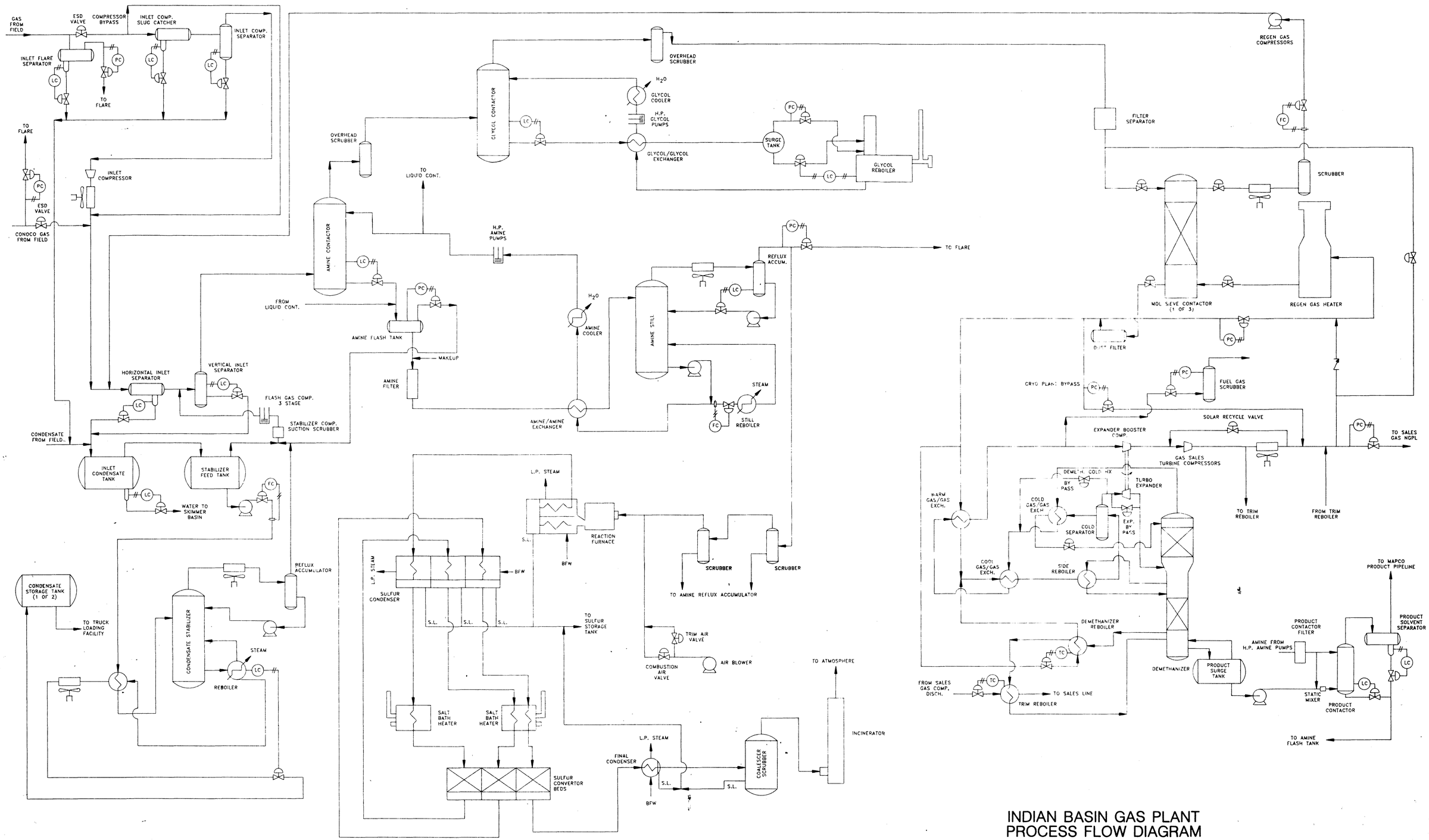
PRELIMINARY APP.	DATE	FINAL APP.	DATE

DATE	BY	REVISIONS
9/1/92	DKM	UPDATE
1/12/94	DEE	ADDED INLET SEPARATORS & STOR. TANK
8/1/94	BLO	DRAIN SYSTEM UPGRADE
8/4/94	CMS	ADD FIRE EXTINGUISHER LOCATION PLAN

Fig. 3

INDIAN BASIN GAS PLANT
OPEN DRAIN SYSTEM

SCALE: AS SHOWN
DATE: 7/14/94
DRAFTED BY: MR/DKM
BY: EMP/HCW
DWG. NO.
IBGP-4



INDIAN BASIN GAS PLANT
PROCESS FLOW DIAGRAM

Fig. 4

APPENDIX A

LABORATORY RESULTS OF COMMINGLED DISCHARGE FLUID

Analytical **Technologies,** Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **408399**

September 14, 1994

Marathon Oil Co.
P.O. Box 552
Midland, TX 79702-0552

Project Name/Number: INDIAN BASIN GAS PLANT GROUNDWATER DISCHARGE PLAN (IBGP GW DISCHARGE PLAN)

Attention: Bob Menzie

On **08/25/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

The relative percent difference (RPD) for quality control duplicate analyses for arsenic meets ATI acceptance criteria; the results are <5X the reporting limit.

Due to matrix interferences, cadmium spike analysis was performed using the Method of Standard Additions (MSA). The spike result given is the correlation coefficient (CC), which is ≥ 0.995.

EPA Method 8010/8020 and 504.1 analyses were performed by Analytical Technologies, Inc., Albuquerque, NM.

All other analyses were performed by Analytical Technologies, Inc., 9830 S. 51st Street, Suite B-113, Phoenix, AZ.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure

Analytical **Technologies**, Inc.

CLIENT	: MARATHON OIL CO.	DATE RECEIVED	: 08/25/94
PROJECT #	: (NONE)		
PROJECT NAME	: IBGP GW DISCHARGE PLAN	REPORT DATE	: 09/14/94

ATI ID: 408399

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	COMMINGLED FLUID TO INJ.	AQUEOUS	08/24/94
02	TRIP BLANK	AQUEOUS	08/23/94

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	2

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

ATI I.D. : 408399

CLIENT : MARATHON OIL COMPANY
PROJECT # : (NONE)
PROJECT NAME : IBGP GW DISCHARGE PLAN

DATE RECEIVED : 08/26/94
REPORT DATE : 09/14/94

PARAMETER	UNITS	01
CARBONATE (CACO3)	MG/L	<1
BICARBONATE (CACO3)	MG/L	444
HYDROXIDE (CACO3)	MG/L	<1
TOTAL ALKALINITY (AS CACO3)	MG/L	444
CHLORIDE (EPA 325.2)	MG/L	5300
PH (EPA 150.1)	UNITS	7.3
SULFATE (EPA 375.2)	MG/L	1400
T. DISSOLVED SOLIDS (160.1)	MG/L	9900

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : MARATHON OIL COMPANY
PROJECT # : (NONE)
PROJECT NAME : IBGP GW DISCHARGE PLAN ATI I.D. : 408399

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
CARBONATE	MG/L	40803401	<1	<1	NA	NA	NA	NA
BICARBONATE	MG/L		205	203	1	NA	NA	NA
HYDROXIDE	MG/L		<1	<1	NA	NA	NA	NA
TOTAL ALKALINITY	MG/L		205	203	1	NA	NA	NA
CHLORIDE	MG/L	40839802	12.7	12.6	0.8	23.2	10.0	105
PH	UNITS	40803404	7.6	7.6	0	NA	NA	NA
SULFATE	MG/L	40803401	200	190	5	400	200	100
TOTAL DISSOLVED SOLIDS	MG/L	40949902	8000	7900	1	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

METALS RESULTS

ATI I.D. : 408399

CLIENT : MARATHON OIL COMPANY
PROJECT # : (NONE)
PROJECT NAME : IBGP GW DISCHARGE PLAN

DATE RECEIVED : 08/26/94
REPORT DATE : 09/14/94

PARAMETER	UNITS	01
SILVER (EPA 200.7/6010)	MG/L	<0.010
ARSENIC (EPA 206.2/7060)	MG/L	0.008
BARIUM (EPA 200.7/6010)	MG/L	0.130
CALCIUM (EPA 200.7/6010)	MG/L	643
CADMIUM (EPA 213.2/7131)	MG/L	<0.0005
CHROMIUM (EPA 200.7/6010)	MG/L	<0.010
MERCURY (EPA 245.1/7470)	MG/L	<0.0002
POTASSIUM (EPA 200.7/6010)	MG/L	64.7
MAGNESIUM (EPA 200.7/6010)	MG/L	136
SODIUM (EPA 200.7/6010)	MG/L	3440
LEAD (EPA 239.2/7421)	MG/L	<0.002
SELENIUM (EPA 270.2/7740)	MG/L	<0.005

Analytical Technologies, Inc.

METALS - QUALITY CONTROL

CLIENT : MARATHON OIL COMPANY
PROJECT # : (NONE)
PROJECT NAME : IBGP GW DISCHARGE PLAN ATI I.D. : 408399

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
SILVER	MG/L	40806311	<0.010	<0.010	NA	0.892	1.00	89
ARSENIC	MG/L	40839901	0.008	0.010	22	0.052	0.050	88
BARIUM	MG/L	40806311	0.063	0.063	0	0.982	1.00	92
CALCIUM	MG/L	40839901	643	638	0.8	1640	1000	100
CADMIUM	MG/L	40839901	<0.0005	<0.0005	NA	MSA	CC=	.9957
CHROMIUM	MG/L	40806311	<0.010	<0.010	NA	0.866	1.00	87
MERCURY	MG/L	40807004	<0.0002	<0.0002	NA	0.0048	0.0050	96
POTASSIUM	MG/L	40878603	25.4	25.0	2	74.9	50.0	99
MAGNESIUM	MG/L	40839901	136	135	0.7	637	500	100
SODIUM	MG/L	40839901	3440	3410	0.9	4370	1000	93
LEAD	MG/L	40839901	<0.002	<0.002	NA	0.041	0.050	82
SELENIUM	MG/L	40839901	<0.005	<0.005	NA	0.029	0.050	58

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : ETHYLENE DIBROMIDE (EPA METHOD 504.1)

CLIENT : MARATHON OIL CO. ATI I.D.: 408399

PROJECT # : (NONE)

PROJECT NAME : IBGP GW DISCHARGE PLAN

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	COMMINGLED FLUID TO INJ.	AQUEOUS	08/24/94	09/11/94	09/11/94	1

PARAMETER	UNITS	01
ETHYLENE DIBROMIDE	UG/L	<0.01

SURROGATE:

1,4-DICHLOROBENZENE (%) 84

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

REAGENT BLANK

TEST	: ETHYLENE DIBROMIDE (EPA METHOD 504.1)		
BLANK I.D.	: 091194	ATI I.D.	: 408399
CLIENT	: MARATHON OIL CO.	MATRIX	: AQUEOUS
PROJECT #	: (NONE)	DATE EXTRACTED	: 09/11/94
PROJECT NAME	: IBGP GW DISCHARGE PLAN	DATE ANALYZED	: 09/11/94
		DILUTION FACTOR	:

PARAMETER	UNITS	
ETHYLENE DIBROMIDE	UG/L	<0.01
SURROGATE:		
1,4-DICHLOROBENZENE (%)		98

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: ETHYLENE DIBROMIDE (EPA METHOD 504.1)		
MSMSD #	: 091194	ATI I.D.	: 408399
CLIENT	: MARATHON OIL CO.	DATE EXTRACTED	: 09/11/94
PROJECT #	: (NONE)	DATE ANALYZED	: 09/11/94
PROJECT NAME	: IBGP GW DISCHARGE PLAN	SAMPLE MATRIX	: AQUEOUS
REF. I.D.	: 091194	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
ETHYLENE DIBROMIDE	<0.01	0.25	0.20	80	0.22	88	10

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 8010/8020)
CLIENT : MARATHON OIL CO. ATI I.D.: 408399
PROJECT # : (NONE)
PROJECT NAME : IBGP GW DISCHARGE PLAN

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	COMMINGLED FLUID TO INJ.	AQUEOUS	08/24/94	NA	09/01/94	250
02	TRIP BLANK	AQUEOUS	08/23/94	NA	09/01/94	1

PARAMETER	UNITS	01	02
BENZENE	UG/L	2800	<0.5
BROMODICHLOROMETHANE	UG/L	<50	<0.2
BROMOFORM	UG/L	<130	<0.5
BROMOMETHANE	UG/L	<250	<1.0
CARBON TETRACHLORIDE	UG/L	<50	<0.2
CHLOROBENZENE	UG/L	<130	<0.5
CHLOROETHANE	UG/L	<130	<0.5
CHLOROFORM	UG/L	<130	<0.5
CHLOROMETHANE	UG/L	<250	<1.0
DIBROMOCHLOROMETHANE	UG/L	<50	<0.2
1,2-DIBROMOETHANE (EDB)	UG/L	<50	<0.2
1,2-DICHLOROBENZENE	UG/L	<130	<0.5
1,3-DICHLOROBENZENE	UG/L	<130	<0.5
1,4-DICHLOROBENZENE	UG/L	<130	<0.5
1,1-DICHLOROETHANE	UG/L	<50	<0.2
1,2-DICHLOROETHANE (EDC)	UG/L	<130	<0.5
1,1-DICHLOROETHENE	UG/L	<50	<0.2
CIS-1,2-DICHLOROETHENE	UG/L	<50	<0.2
TRANS-1,2-DICHLOROETHENE	UG/L	<250	<1.0
1,2-DICHLOROPROPANE	UG/L	<50	<0.2
CIS-1,3-DICHLOROPROPENE	UG/L	<50	<0.2
TRANS-1,3-DICHLOROPROPENE	UG/L	<50	<0.2
ETHYLBENZENE	UG/L	160	<0.5
METHYLENE CHLORIDE	UG/L	<500	<2.0
1,1,2,2-TETRACHLOROETHANE	UG/L	<50	<0.2
TETRACHLOROETHENE	UG/L	<130	<0.5
TOLUENE	UG/L	5600	<0.5
1,1,1-TRICHLOROETHANE	UG/L	<250	<1.0
1,1,2-TRICHLOROETHANE	UG/L	<50	<0.2
TRICHLOROETHENE	UG/L	<50	<0.2
TRICHLOROFLUOROMETHANE	UG/L	<50	<0.2
VINYL CHLORIDE	UG/L	<130	<0.5
TOTAL XYLENES	UG/L	2700	<0.5
SURROGATES:			
BROMOCHLOROMETHANE (%)		97	97
TRIFLUOROTOLUENE (%)		98	97

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS - QUALITY CONTROL

REAGENT BLANK

TEST	: EPA 8010/8020	ATI I.D.	: 408399
BLANK I.D.	: 090194	MATRIX	: AQUEOUS
CLIENT	: MARATHON OIL CO.	DATE EXTRACTED	: NA
PROJECT #	: (NONE)	DATE ANALYZED	: 09/01/94
PROJECT NAME	: IBGP GW DISCHARGE PLAN	DIL. FACTOR	: 1

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
BROMODICHLOROMETHANE	UG/L	<0.2
BROMOFORM	UG/L	<0.5
BROMOMETHANE	UG/L	<1.0
CARBON TETRACHLORIDE	UG/L	<0.2
CHLOROBENZENE	UG/L	<0.5
CHLOROETHANE	UG/L	<0.5
CHLOROFORM	UG/L	<0.5
CHLOROMETHANE	UG/L	<1.0
DIBROMOCHLOROMETHANE	UG/L	<0.2
1,2-DIBROMOETHANE (EDB)	UG/L	<0.2
1,2-DICHLOROBENZENE	UG/L	<0.5
1,3-DICHLOROBENZENE	UG/L	<0.5
1,4-DICHLOROBENZENE	UG/L	<0.5
1,1-DICHLOROETHANE	UG/L	<0.2
1,2-DICHLOROETHANE (EDC)	UG/L	<0.5
1,1-DICHLOROETHENE	UG/L	<0.2
CIS-1,2-DICHLOROETHENE	UG/L	<0.2
TRANS-1,2-DICHLOROETHENE	UG/L	<1.0
1,2-DICHLOROPROPANE	UG/L	<0.2
CIS-1,3-DICHLOROPROPENE	UG/L	<0.2
TRANS-1,3-DICHLOROPROPENE	UG/L	<0.2
ETHYLBENZENE	UG/L	<0.5
METHYLENE CHLORIDE	UG/L	<2.0
1,1,2,2-TETRACHLOROETHANE	UG/L	<0.2
TETRACHLOROETHENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
1,1,1-TRICHLOROETHANE	UG/L	<1.0
1,1,2-TRICHLOROETHANE	UG/L	<0.2
TRICHLOROETHENE	UG/L	<0.2
TRICHLOROFLUOROMETHANE	UG/L	<0.2
VINYL CHLORIDE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
SURROGATES:		
BROMOCHLOROMETHANE (%)		95
TRIFLUOROTOLUENE (%)		99

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: PURGEABLE HALOCARBONS/AROMATICS (EPA 8010/8020)		
MSMSD #	: 40842808	ATI I.D.	: 408399
CLIENT	: MARATHON OIL CO.	DATE EXTRACTED	: NA
PROJECT #	: (NONE)	DATE ANALYZED	: 09/09/94
PROJECT NAME	: IBGP GW DISCHARGE PLAN	SAMPLE MATRIX	: AQUEOUS
REF. I.D.	: 40842808	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.5	10	10	100	11	110	10
CHLOROBENZENE	<0.5	10	9.8	98	9.8	98	0
1,1-DICHLOROETHENE	<0.2	10	7.2	72	7.2	72	0
TOLUENE	<0.5	10	10	100	10	100	0
TRICHLOROETHENE	<0.2	10	11	110	12	120	9

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 8-24-94 PAGE 1 OF 1

ATI LAB I.D. 408399

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER: Bob Menzie

COMPANY: Marathon Oil Company
ADDRESS: P.O. Box 552
Midland, TX 79702-0552
PHONE: 915-687-8312
FAX: 915-687-8337

BILL TO: Bob Menzie
COMPANY: Marathon Oil Company
ADDRESS: 125 W. Missouri St
Midland, TX 79701

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
COMMINGLED FLUID TO INJ.	8-24-94	12:15P	W	01
TRIP BLANK	8-23-94	12:30P	W	02

ANALYSIS REQUEST

	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)		504 (EDB) DL = 0.1 ug/L	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	Gen. Chem ** / TDS / pH	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)		SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal		The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion (WQCC - DL *)	RCRA Metals by TCLP (1311)		NUMBER OF CONTAINERS
COMMINGLED FLUID TO INJ.						✓	✓	✓		✓													✓			6
TRIP BLANK				✓																						1

PROJECT INFORMATION

PROJ. NO.:
PROJ. NAME: Indian Basin Gas Plant Groundwater Discharge
P.O. NO.: IBGP GW Discharge Plan
SHIPPED VIA: Greyhound

SAMPLE RECEIPT

NO. CONTAINERS	7
CUSTODY SEALS	(Y) / N / NA
RECEIVED INTACT	Y
RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ~~☐~~ 2 WEEK

Comments:
* 8 RCRA metals plus Na, K, Ca, Mg
** Anions (Cl, SO_4, HCO_3, CO_3)

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Robert J. Menzie Time: 4:30pm	Signature: Time:	Signature: Time:
Printed Name: Robert J. Menzie Date: 8-24-94	Printed Name: Date:	Printed Name: Date:
Company: Marathon Phone: 915-687-8312	Company:	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: (LAB) 3.
Signature: Time:	Signature: Time:	Signature: D. Lutes Time: 13:25
Printed Name: Date:	Printed Name: Date:	Printed Name: Dianne Lutes Date: 8/25/94
Company:	Company:	Analytical Technologies, Inc.

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001 • Portland (503) 684-0447 • Albuquerque (505) 344-3777 DISTRIBUTION: White, Canary - ATI • Pink - ORIGINATOR

Analytical Technologies, Inc. Albuquerque, NM

Chain of Custody

DATE 8/25/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: LETITIA KRAKOWSKI

COMPANY: **Analytical Technologies, Inc.**

ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

* NMCC - WATER QUALITY CONTROL COMMISSION
see Attached LIST

CLIENT PROJECT MANAGER:
Mitch Rubinstein

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
408399-01	8-24	1215	AQ	1

ANALYSIS REQUEST

SAMPLE ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	610/8310	Cl, SO4, HCO3, CO3, TDS, Ph	RCRA metals Total Digestion *	8240 (TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
408399-01									X	X													4

PROJECT INFORMATION	
PROJECT NUMBER:	408399
PROJECT NAME:	Marathon
QC LEVEL:	(STD) IV
QC REQUIRED:	MS MSD BLANK
TAT:	(STANDARD) RUSH!

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	4
CHAIN OF CUSTODY SEALS	Y
INTACT?	Y
RECEIVED GOOD COND./COLD	Y
LAB NUMBER	408399

DUE DATE: 9/9
RUSH SURCHARGE: 0
CLIENT DISCOUNT: 10 %

with LK960

* plus Na, K, Ca, Mg

SAMPLES SENT TO:
SAN DIEGO
FT. COLLINS
RENTON
PENSACOLA
PORTLAND
PHOENIX X
FIBERQUANT

RELINQUISHED BY: 1.
Signature: Time: 1730
Printed Name: Date: 8/25/94
Dianne Lutter
Analytical Technologies, Inc.
Albuquerque

RECEIVED BY: (LAB) 1.
Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date
Company:

RECEIVED BY: (LAB) 2.
Signature: Time: 1916
Rosella Vidal
Printed Name: Date: 8/26/94
Rosella Vidal
Company: ATI

APPENDIX B

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN (DECEMBER 28, 1992)

(Prior t ... mpleting Part I, refer to regulations and instr... ions page 3.)

SPILL PREVENTION CONTROL & COUNTERMEASURE PLAN

PART I
GENERAL INFORMATION

1. Name of facility INDIAN BASIN GAS PLANT

2. Type of facility Onshore Production Facility

3. Location of facility Eddy County, New Mexico, approximately 20 miles W-NW of Carlsbad, New Mexico

4. Name and address of owner or operator:

   Name Marathon Oil Company

   Address P. O. Box 552

   Midland, Texas 79702

5. Designated person accountable for oil spill prevention at facility:

   Name and title N. R. Garza, Plant Superintendent

6. Facility experienced a reportable oil spill event during the twelve months prior to Jan. 10, 1974 (effective date of 40 CFR. Part 112). (If YES, complete Attachment ±1.) _____

MANAGEMENT APPROVAL

This SPCC Plan will be implemented as herein described.

Signature A. R. Kukla

Name A. R. Kukla

Title Mid-Continent Region Production Manager

CERTIFICATION

I hereby certify that I have examined the facility, and being familiar with the provisions of 40 CFR. Part 112, attest that this SPCC Plan has been prepared in accordance with good engineering practices.

Paul J. Tauscher
Printed Name of Registered Professional Engineer

(Seal)

Paul J. Tauscher
Signature of Registered Professional Engineer

Date Dec 28, 1992

Registration No. 4581 State WY

7. Potential Spills — Prediction & Control:

Source	Major Type of Failure	Total Quantity (bbls)	Rate (bbls/hr)	Direction of Flow*	Secondary Containment
2 Condensate Storage Tanks	Leaks, Tank Rupture	3400		S	No *
1 Lube Oil Storage Tank	Leaks, Tank Rupture	210		S	Yes
1 Lube Oil Storage Tank	Leaks, Tank Rupture	52		S	No
3 Open Top Skimmer Tanks	Leaks, Tank Rupture, Over-fill	300		S	Yes
1 Open Top Skimmer Tank	Leaks, Tank Rupture, Over-fill	437		S	Yes
2 Salt Water Disposal Tanks	Leaks, Tank Rupture	1500		S	No **
1 Lube Oil Storage Tank	Leaks, Tank Rupture	6		S	Yes
1 Diesel Storage Tank	Leaks, Tank Rupture	10		S	Yes
Air Strinner Tank	Leaks, Runture	420		S	Yes
General Containment Area Containing Storage Tanks of Various Sizes		20 - 106		S	Yes

* Currently in use are two horizontal vessels (old natural gasoline storage tanks) for condensate storage. These vessels do not have containment dikes, due to the fire hazard that would occur if an adjacent LPG tank failed and spilled its contents into the diked area.

** The water contained in these tanks has been treated to remove any free hydrocarbon.
A number of process vessels are located throughout the plant and contain hydrocarbon liquids. Secondary containment is not provided at these vessels due to process and safety constraints. However, in the event of a release, flow would be south towards the plant berm. (See attached plot plan).

Name of facility Indian Basin Gas Plant

Operator Marathon Oil Company

PART I
GENERAL INFORMATION

[Response to statements should be: YES, NO, or NA (Not Applicable).]

8. Containment or diversionary structures or equipment to prevent oil from reaching navigable waters are practicable. (If NO, complete Attachment #2.) No

9. **Inspections and Records**
   A. The required inspections follow written procedures. Yes
   B. The written procedures and a record of inspections, signed by the appropriate supervisor or inspector, are attached. Yes
   Discussion: Daily visual inspections are made and readings taken and recorded by operational personnel during normal rounds on each of the three daily shifts. During these rounds, operating personnel search for non-typical situations. If these situations are encountered, they are documented and promptly reported to supervisory personnel via the plant work order system which is reviewed and signed by the appropriate supervisor.

   Spills are reported as soon as practical to supervisor via the Mid-Continent Spill Reporting Program.
   Semi-Annual inspection is conducted by plant supervision. Records of these inspections are available.

10. **Personnel Training and Spill Prevention Procedures**
   A. Personnel are properly instructed in the following:
   (1) operation and maintenance of equipment to prevent oil discharges, and Yes
   (2) applicable pollution control laws, rules, and regulations. Yes
   Describe procedures employed for instruction: Instructions are narrative. Environmental Control and Site Security are discussed at safety meetings, which are held on a monthly basis. Potential spill situations are reported to the foreman via the plant work order system and also reported by the safety committee on a monthly basis. Such situations are corrected.

   B. Scheduled prevention briefings for the operating personnel are conducted frequently enough to assure adequate understanding of the SPCC Plan. Yes
   Describe briefing program: Operation Management frequently reviews environmental standards at safety meetings. Such reviews assure an adequate understanding of SPCC. Operating superintendents are periodically requested to update Contingency Plans. Superintendents thereby assess and revise procedures when necessary.

Name of facility Indian Basin Gas Plant

Operator Marathon Oil Company

(Prior to completing Part II, Alternate A, refer to regulations and instructions pages 6-7.)

PART II. ALTERNATE A
DESIGN AND OPERATING INFORMATION
ONSHORE FACILITY (EXCLUDING PRODUCTION)

A. Facility Drainage

1. Drainage from diked storage areas is controlled as follows (include operating description of valves, pumps, ejectors, etc. *(Note: Flapper-type valves should not be used)*: None of the diked areas have installed drains.

Any spill that might occur would be removed with a vacuum truck, or transferred, via a portable pump, to the plant open drain system. Excess rain water is removed in this manner.

2. Drainage from undiked areas is controlled as follows (include description of ponds, lagoons, or catchment basins and methods of retaining and returning oil to facility): The plant operates under a Groundwater Discharge Plan approved by the New Mexico Oil Conservation Division of 10/30/89. The plant is in compliance with all phases of the plan. The Groundwater Discharge Plan is available for review onsite at the IBGP office and in the MCR office, Midland, Texas.

3. The procedure for supervising the drainage of rain water from secondary containment into a storm drain or an open watercourse is as follows (include description of (a) inspection for pollutants, and (b) method of valving security). (A record of inspection and drainage events is to be maintained on a form similar to Attachment #3): None of the diked areas have installed drains.

When necessary, rain water removal is accomplished by transferring the fluid to the plant open drain system via vacuum truck or via a portable transfer pump.

The plant open drain system processes the fluid for removal of free hydrocarbon and the waste water is commingled and injected with Indian Basin Field produced water.

Name of facility Indian Basin Gas Plant

Operator Marathon Oil Company

PART II. ALTERNATE A
DESIGN AND OPERATING INFORMATION
ONSHORE FACILITY (EXCLUDING PRODUCTION)

[Response to statements should be: YES, NO, or N/A (Not Applicable).]

B. Bulk Storage Tanks

1. Describe tank design, materials of construction, fail-safe engineering features, and if needed, corrosion protection: The condensate storage tanks are above ground storage bullets operating at atmospheric conditions. All other tanks are above ground, atmospheric, bulk storage tanks. All tanks are API design/carbon steel.

2. Describe secondary containment design, construction materials, and volume: All secondary containments are earthen dikes with volumes sufficient to hold the storage capacity of the largest tank contained there.

3. Describe tank inspection methods, procedures, and record keeping: Tanks are observed in operation daily, at least once per shift, by operating personnel for signs of leakage or other deterioration. Such signs are reported and corrected via the plant work order system.

Where deemed appropriate, more rigorous inspection methods, such as ultra-sonic thickness testing, are conducted on a periodic basis.

4. Internal heating coil leakage is controlled by one or more of the following control factors:
   (a) Monitoring the steam return or exhaust lines for oil. N/A
   Describe monitoring procedure:
   (b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system. N/A
   (c) Installing external heating systems. N/A

5. Disposal facilities for plant effluents discharged into navigable waters are observed frequently for indication of possible upsets which may cause an oil spill event.
   Describe method and frequency of observations: All Plant effluents, including cooling tower and boiler blowdowns and wastes collected in the plant sump systems, are treated to remove free hydrocarbon. The waste water is commingled with the Indian Basin Field produced water and injected into an injection well (Indian Basin Gas Com. SWD No. 1 or Marathon Federal SWD No. 1).

Name of facility Indian Basin Gas Plant

Operator Marathon Oil Company

PART II. ALTERNATE A
DESIGN AND OPERATING INFORMATION
ONSHORE FACILITY (EXCLUDING PRODUCTION)

[Response to statements should be: YES, NO, or N/A (Not Applicable).]

C. Facility Transfer Operations, Pumping, and In-plant Process

1. Corrosion protection for buried pipelines:
   (a) Pipelines are wrapped and coated to reduce corrosion. Yes
   (b) Cathodic protection is provided for pipelines if determined necessary by electrolytic testing. Yes
   (c) When a pipeline section is exposed, it is examined and corrective action taken as necessary. Yes

2. Pipeline terminal connections are capped or blank-flanged and marked if the pipeline is not in service or on standby service for extended periods. N/A
   Describe criteria for determining when to cap or blank-flange: The plant is in continuous operation. Procedures for abandonment of pipelines will be developed when necessary.

3. Pipe supports are designed to minimize abrasion and corrosion and allow for expansion and contraction. Yes
   Describe pipe support design: Pipe supports are steel stanchion with wear plated protection at points of wear and contact. Where large temperature swings are anticipated, expansion loops are installed.

4. Describe procedures for regularly examining all above-ground valves and pipelines (including flange joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces): All equipment is observed in operation daily by plant operating personnel for signs of leakage or other deterioration. Such signs are reported and corrected via the plant work order system.

   Where deemed appropriate, more rigorous inspection methods, such as ultra-sonic thickness testing or X-ray inspection, are conducted.

5. Describe procedures for warning vehicles entering the facility to avoid damaging above-ground piping: Signs and traffic barrier guards where needed.

Name of facility Indian Basin Gas Plant

Operator Marathon Oil Company

PART II. ALTERNATE A
DESIGN AND OPERATING INFORMATION
ONSHORE FACILITY (EXCLUDING PRODUCTION)

[Response to statements should be: YES, NO, or NA (Not Applicable).]

D. Facility Tank Car & Tank Truck Loading/Unloading Rack

Tank car and tank truck loading/unloading occurs at the facility. (If YES, complete 1 through 5 below.) Yes*

1. Loading/unloading procedures meet the minimum requirements and regulations of the Department of Transportation. Yes

2. The unloading area has a quick drainage system. No

3. The containment system will hold the maximum capacity of any single compartment of a tank truck loaded/unloaded in the plant. N/A
   Describe containment system design, construction materials, and volume: N/A

* Only truck loading is encountered at the plant's condensate loading rack facility. There is no storage at or near the loading rack. Due to the light specific gravity of the condensate, a containment system at the loading rack facility is not practical because of the potential for a fire hazard.

4. An interlocked warning light, a physical barrier system, or warning signs are provided in loading/unloading areas to prevent vehicular departure before disconnect of transfer lines. Yes
   Describe methods, procedures, and/or equipment used to prevent premature vehicular departure: A ground wire system is in use, which will not allow the transfer pump to operate unless the truck is attached both to the groundwire and to the loading rack via the transfer line. If this circuit is broken, the transfer pump will shut down.

In addition, the loading rack is equipped with an automatic shutoff, which activates when a preset volume passes through the LACT meter. This will limit the volume of condensate that could be leaked if premature truck departure would occur.

5. Drains and outlets on tank trucks and tank cars are checked for leakage before loading/unloading or departure. Yes

Name of facility Indian Basin Gas Plant

Operator Marathon Oil Company

PART II. ALTERNATE A
DESIGN AND OPERATING INFORMATION
ONSHORE FACILITY (EXCLUDING PRODUCTION)

[Response to statements should be: YES, NO, or N/A (Not Applicable).]

E. Security

1. Plants handling, processing, or storing oil are fenced. No*

2. Entrance gates are locked and/or guarded when the plant is unattended or not in production. N/A

3. Any valves which permit direct outward flow of a tank's contents are locked closed when in non-operating or standby status. Yes

4. Starter controls on all oil pumps in non-operating or standby status are:
   (a) locked in the off position; No**
   (b) located at site accessible only to authorized personnel. Yes

5. Discussion of items 1 through 4 as appropriate:
   Gas plant is attended 24 hours per day each day of the year.

   * The gas plant is fenced; the condensate storage tanks are outside the fenced area.

   ** The LACT unit addressed in Items D.4 has a key lock security system which requires an assigned key to allow loading trucks.

6. Discussion of the lighting around the facility: Flood lighting and localized area lighting approved by Marathon Oil Company.

Name of facility Indian Basin Gas Plant

Operator Marathon Oil Company

SPCC PLAN, ATTACHMENT #2
OIL SPILL CONTINGENCY PLANS AND
WRITTEN COMMITMENT OF MANPOWER, EQUIPMENT, AND MATERIALS

Secondary containment or diversionary structures are impracticable for this facility for the following reasons (attach additional pages if necessary):

Secondary containment is not provided around the bases of selected storage tanks and process vessels since trapped volatile liquid hydrocarbons would create an extreme fire hazard in the plant area. However, in the event of a large liquid hydrocarbon release, flow would be toward the south and contained by the plant perimeter berm.

No secondary containment is provided for the lube oil storage tank , in part due to its remote location and relatively small volume. Again, in the event of a release, flow would be to the south and contained by the Plant perimeter berm.

	Yes
A strong oil spill contingency plan is attached.	Yes
A written commitment of manpower, equipment, and materials is attached.	Yes

Name of facility Indian Basin Gas Plant

Operator Marathon Oil Company

(Attachment #2, SPCC Plan)

SPCC PLAN INSPECTION PROCEDURES

Eddy County, New Mexico

1. As part of his normal routine, the pumper(s) will visually inspect the field's production facilities for accumulations, leaks of oil or other hazardous substances. The pumper must perform the inspection at least once a day.

2. The production facilities to be inspected will include but are not limited to wellheads, flowlines, valves, tanks, vessels, miscellaneous fittings (flanges, etc.), sumps and ditches.

3. In the event that an accumulation or leak is discovered, the pumper shall initiate the actions detailed in the current SPCC Plan.

4. The pumper shall record his daily inspection on a daily field report.

5. The field gangpusher shall record his monthly inspection on a monthly inspection report.

R. A. Biernbaum
Operations Superintendent

OIL SPILL CONTINGENCY PLAN

In the case of an oil spill from a producing well, a testing vessel, a tank, flowline or any other related oil field equipment, the following action will be implemented to protect human life and regain control of the spill as rapidly as possible. All steps should be carefully considered to ensure control of the spill is effectively and efficiently regained.

1) Shut off the source contributing to the spill. Analyze the type of spill and determine the most appropriate immediate action to be taken to contain the spill.

2) If the spill contains hydrocarbons, collect lighters and matches from personnel working in the area.

3) Obtain labor and equipment to construct a containment barrier as rapidly as possible. (See the attached directory.)

4) As required have vacuum truck(s) pick up pooled or contained liquids.

5) As necessary, the use of absorbent material (straw, dirt, lost circulation material, commercial sorbents, etc.) should be utilized to remove standing volume which cannot be efficiently removed by a vacuum truck.

6) Restrict access to the affected area to only those persons involved in control, containment, and clean-up operations.

7) Notify the company representative in charge of the facility of the spill and action being taken, who will in turn notify his respective supervisor.

8) As required, the Plant Superintendent will notify the regulatory agency of the spill.

9) Keep livestock from affected area and if necessary, as appropriate notify the landowner and other surface users of the situation.

10) The person in charge of the spill response activities shall keep a daily log of response activities. The log book shall be bound, <u>not</u> loose leaf. Entries shall be dated, timed and signed.

11) The Duty Officer at the National Response Center (1-800-424-8802) must be notified immediately when a spill reaches "waters of the U.S.", or it appears likely that the spill will reach "water of the U.S."

"For additional information, refer to the Mid-Continent Region Contingency/ Response Plan".

Production Operations, United States

Marathon Oil Company

P. O. Box 1324
Artesia, New Mexico 88210
Telephone (505) 457-2621

SPCC PLAN

COMMITMENT OF MANPOWER, EQUIPMENT AND MATERIALS

TO: OPERATIONS SUPERVISORS

THIS IS YOUR AUTHORITY TO EXPEDITIOUSLY COMMIT MANPOWER, EQUIPMENT AND MATERIALS NECESSARY TO ARREST AND CONTAIN AND INITIATE CLEANUP OF ANY HARMFUL QUANTITY OF OIL OR HAZARDOUS MATERIAL DISCHARGED FROM THIS FACILITY. THIS AUTHORITY MAY BE DELEGATED BY YOURSELVES TO THE PERSON IN CHARGE OF THE FACILITY TO ENSURE THAT NECESSARY ACTIVITIES ARE IMPLEMENTED AS QUICKLY AS POSSIBLE AFTER A SPILL IS NOTED.

A. R. Kukla
Production Manager
Mid-Continent Region

NRG/gh

9/3/92

LIST OF EMERGENCY EQUIPMENT AND SERVICES

Field Atoka Penn, Indian Basin, Revelation, North Shugart

SPILLS

Equipment and Services available to Contain and Clean-up Spills on Land, Rivers, Creeks, and/or Coastal Bays

Available Equipment/Service	Source or Organization	Location	Telephone No.
Clean-up Service	Stevenson-Roach	Artesia, NM	(505)746-3222
Earth Moving	Truck & Tractor Works	Artesia, NM	(505)748-1130
	M & M Excavating	Carlsbad, NM	(505)236-6600
	Franco Construction	Artesia, NM	(505)365-2408
Fire Control	Carlsbad Fire Dept.	Carlsbad, NM	(505)885-3124
	Artesia Fire Dept.	Artesia, NM	(505)746-2701
Oil Field Haulers	I & W, Inc.	Loco Hills, NM	(505)677-2111
	B & E, Inc.	Carlsbad, NM	(505)885-6663
Portable Tanks	T & C Tank	Artesia, NM	(505)746-9788
Vacuum Trucks	I & W, Inc.	Loco Hills, NM	(505)677-2111
	B & E, Inc.	Carlsbad, NM	(505)885-6663

COMPANY PERSONNEL NOTIFICATION LIST

Indian Basin Gas Plant

(505) 457-2621 / (505) 457-2212

Employee	Title	Home Telephone
Garza, Noel R.	Plant Superintendent	(505) 887-3490
Schweser, C. Mike	Maintenance Foreman	(505) 885-0716
White, Rick R.	Process Engineer	(505) 746-2872
Barnett, Jimmy B.	Operator	(505) 746-2818
Bowen, Patrick N.	Operator Helper	(505) 748-3570
Case, Tony W.	Operator	(505) 748-1001
Davis, Larry D.	Operator	(505) 746-9096
Delgado, Lee M.	Operator	(505) 746-2455
Garrett, Kenny R.	Instrument Repairman	(505) 748-2932
Hamill, Bob B.	Electrician	(505) 887-7940
Harkness, Ginger J.	Records Processor	(505) 746-2311
Harrison, Jerry J.	Pumper	(505) 365-2962
Ivy, Jack L.	Pumper	(505) 748-2763
Kelsey, Ed B.	Pumper	(505) 748-3031
Klein, Timothy P.	Plant Gangpusher	(505) 484-3675
Manthei, Don W.	Welder	(505) 457-2213
Moreno, Manuel S.	Roustabout	(505) 748-2175
Rauch, Jack P.	Operator Helper	(505) 748-2636
Rouse, David B.	Operator	(505) 746-2619
Troublefield, Shaun	Operator Helper	(505) 748-3847
Waldrip, Bruce W.	Instrument Repairman	(505) 457-2252
Wilson, James E.	Tester	(505) 746-6481
Winters, Timothy L.	Field Gangpusher	(505) 746-4662

This form is to be completed for any spill (regardless of size) of any oilfield liquid onto the surface of the ground.

NOTE: Completion of this form does not eliminate the need to verbally report all discharges to your supervisor as soon as practicable after the source has been stopped and containment/cleanup operations have been mobilized as appropriate.

SPILL DATE MO DA YR	EST. SPILL TIME	AM PM	ESTIMATED SPILL VOLUME	TYPE OF FLUID SPILLED	VOLUME RECOVERED

LOCATION OF SPILL (State, County, Field, Lease, Well or Rig): _____

_____

CAUSE OF SPILL: _____

_____

_____

Did the spill occur on location within a company made containment or drainage catchment area? __ Yes __ No If you checked "Yes" to the proceding question, provided such system adequately contained the spill, it is not necessary to complete the remainder of this form. Simply sign and date the report and forward to your supervisor.

DESCRIPTION OF SPILL AREA (Including proximity to watercourse): _____

_____

ACTION TAKEN TO CONTAIN OR CLEANUP SPILL: _____

_____

_____

SURFACE: Sandy __ Sandy Loam __ Clay __ Rocky __ Wet __ Dry __ Snow __
Cultivated __ Grazing __ Vacant __ Rural __ Residential __

APPARENT DAMAGE TO ENVIRONMENT AND PROPERTY: _____

_____

PROPERTY OWNER NOTIFIED: Yes __ No __ Date: _____ By: _____

Name of Property Owner: _____

HOW WAS SPILL FIRST NOTED: _____

_____

_____ _____ _____

Person Initiating Report/Date Supervisor Review/Date Supervisor Review/Date

The back of this form to be completed by Superintendent and/or Environmental Dept., as applicable.

LOCATION OF SPILL (State, County, Field, Lease, Well or Rig): _____

_____

DATE OF SPILL: _____

NOTIFICATION OF REGULATORY AGENCIES:

A. Agency _____ Telephone No. _____ Time _____

Date _____ Person Contacted _____

Comments _____

B. Agency _____ Telephone No. _____ Time _____

Date _____ Person Contacted _____

Comments _____

C. Agency _____ Telephone No. _____ Time _____

Date _____ Person Contacted _____

Comments _____

PERSON MAKING CONTACT WITH AGENCIES: _____

DISTRIBUTION -

ORIGINAL COPY: Environmental and Safety Dept.

OTHER COPIES: _____

(To Be Completed by Supt.) _____

_____

SUPERINTENDENT COMPLETING THIS SECTION: _____

IF CORPORATE OFFICE NOTIFIED:

Person Contacted: _____ Time _____ Date _____

Person Filing Report: _____ _____ _____

Print Name Signature Date

FORM: MCR - 4/27/88

APPENDIX C

STORMWATER POLLUTION PREVENTION PLAN (MARCH 31, 1993)

INDIAN BASIN GAS PLANT

STORM WATER POLLUTION PREVENTION PLAN

Prepared for:

MARATHON OIL COMPANY

Prepared by:

CARTER :: BURGESS
Consultants in Engineering, Architecture,
Planning and the Environment
3880 Hulen Street
Fort Worth, Texas 76107
(817) 735-6000

March 31, 1993

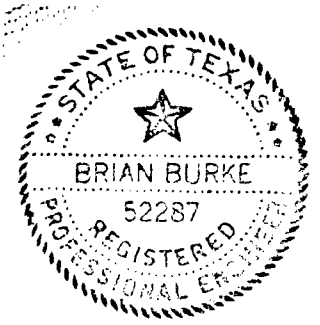
C&B No. 92137501F

I attest that this Storm Water Pollution Prevention Plan has been prepared in accordance with good engineering practices. I have examined the facility and am familiar with the provisions of the Texas NPDES General Permit for Storm Water Discharges associated with industrial activities (Permit No. T X R000000).

NAME: Brian Burke, P.E.

DATE: March 31, 1993

SIGNATURE: B:PBL



SEAL:

STORM WATER POLLUTION PREVENTION PLAN REVISIONS

DATE	REVISION

TABLE OF CONTENTS

APPENDICES

INDIAN BASIN GAS PLANT
STORM WATER POLLUTION PREVENTION PLAN

I. INTRODUCTION

Implementation of a Storm Water Pollution Prevention Plan (SWPPP) is necessary for compliance with National Pollutant Discharge Elimination System (NPDES) regulations. The U.S. Environmental Protection Agency (EPA) administers the NPDES program in New Mexico and has assigned the state general permit N M R000000 for storm water discharges from industrial activities.

This SWPPP has been prepared for Marathon Oil Company of Midland, Texas as a requirement for coverage under the New Mexico state general permit. It applies to operational activities at their Indian Basin Gas Plant in west central Eddy county, New Mexico. The plant produces natural gas, demethanized hydrocarbon mix, stabilized condensate, and sulfur on a continuous 24 hour per day schedule. See Exhibit 1 (Vicinity Map) for the location of the Indian Basin Gas Plant.

The major purposes of this SWPPP are to:

1. Identify potential sources of storm water pollution,
2. Evaluate plant operating procedures as they relate to storm water pollution,
3. Suggest specific techniques for minimizing pollution of storm water,
4. Serve as a focal point and training tool for plant personnel,
5. Provide sample forms for SWPPP implementation, and
6. Establish an overall framework for the continuing effort of storm water pollution prevention at the plant.

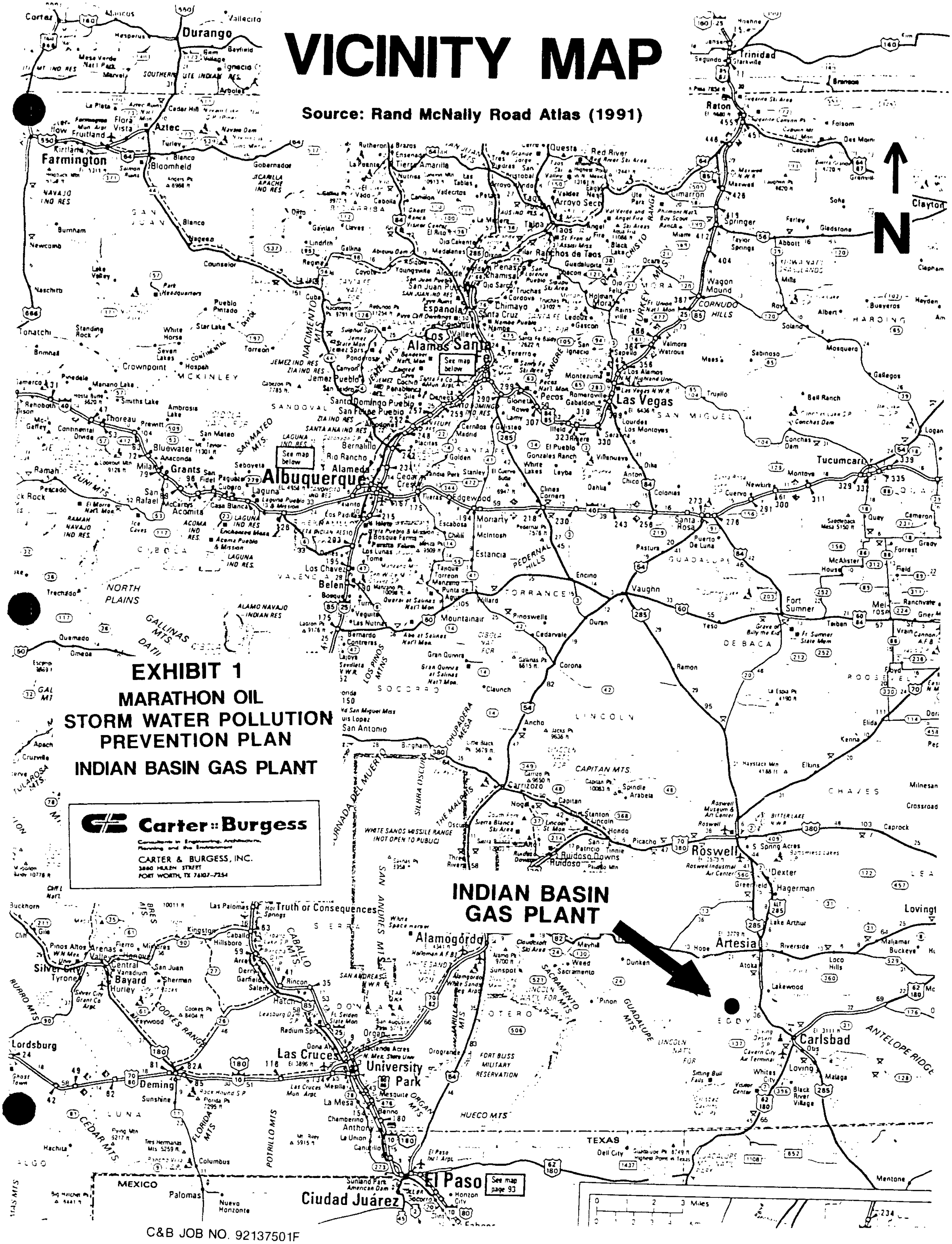
Marathon Oil Company submitted a Notice of Intent to the EPA prior to October 1, 1992 and has been assigned permit number NMR00A170 for the Indian Basin Gas Plant.

II. SITE DESCRIPTION

The Indian Basin Gas Plant is approximately 35 acres in area. It serves a much larger producing gas field. Approximately one percent of the plant is paved. The

VICINITY MAP

Source: Rand McNally Road Atlas (1991)



C&B JOB NO. 92137501F

gas plant is located on Eddy County Road 401. There is a truck loading area on the east side of the plant. Offices, a warehouse, and parking areas are located near the central part of the plant. See Exhibit 2 (Plant Map) for locations of all plant buildings and tanks.

The plant is located in a relatively flat area surrounded by mountainous terrain. The soil is rock and sand with scrub brush and grass vegetation. The mean annual total precipitation is approximately 14 inches. Average annual Class A pan precipitation is approximately 100 inches, and average annual lake evaporation is approximately 65 inches in this area.

III. POLLUTION PREVENTION TEAM

At all times, there shall be Marathon Oil Company employees specifically assigned to the Storm Water Pollution Prevention Team (Team). Initially, the Team consists of Mike Schweser, the Plant Foreman.

Team organization may change at any time. Appendix 1 includes a list of Team tasks and member assignments.

IV. POTENTIAL POLLUTANT SOURCES

An inventory of potential pollutant sources at the plant includes natural and refined petroleum products, processing agents, and waste products. There are other potential pollutants, such as used process filters, batteries, and tires. There are no dry weather discharges (except for discharges to injection wells) anticipated at the plant. Refer to Exhibit 3 for the location of potential storm water pollutants.

A. Drainage Patterns

Exhibit 4 indicates surface drainage patterns at the plant. The property is quite flat but generally drains to the southeast. The only distinct outfall is from a small channel which begins near the west side of the office, flows south past the residue gas compressors, turns east and continues between the loading docks and the condensate tanks. This channel mainly conveys storm water from the office and workshop areas. Runoff from the remainder of the plant drains to the south as sheet flow.

All of the runoff eventually drains to the receiving watercourse, Rocky Arroyo. The arroyo is an intermittent stream that contains flowing water only after a significant rainfall.

B. Inventory of Exposed Materials

Materials handled, treated, stored or disposed at IBGP since September 9, 1989 have typically not been exposed to storm water. Materials are in pipes, vessels, trucks or other sealed containers. For example, liquids are sold as product or injected by well into the ground, but no liquids are discharged from the plant as surface flow. The only potential for surface discharge of a plant chemical is after a spill or leak.

Material Safety Data Sheets (MSDSs) are kept current at the plant at all times. The Team Leader has access to the MSDSs.

Plant materials handled and stored outside since September 9, 1989 are listed below:

1. Materials of Significant Quantity

   a. Reclaimed sulfur is stored in a pit on the west side of the plant. The pit is surrounded by an earth berm to provide complete containment. The berm will be regraded to minimum 18 inch height above the stored sulfur. (Note: An 18 inch berm provides storage for the 100 year, 24 hour storm plus 12 inches.) As a consequence of the berm, there will be no runoff from the sulfur pit.

   b. Solid waste is placed in a dumpster. The dumpster contents are collected and disposed by a commercial service. A shallow trench will be excavated around the dumpster to direct seepage into a nearby depression.

      Solid wastes produced at the IBGP include used filters, spent molecular sieve, glycol filters, used amine filter media, oily debris (without free oil), downhole and equipment scale, office trash, spent sock and cartridge filters, office material and other miscellaneous wastes.

      Consistent with state and federal regulations, wastes not disposed at the plant are taken to a disposal or recycling facility. Recycled wastes include Safety-Kleen solvent and used drums. The Safety-Kleen solvent is recycled by that company at regularly scheduled intervals. It is trucked from the plant to the recycling facility at Midland, Texas. Used drums are recycled periodically. Empty drums are shipped to the original vendor or to a recycler. Used batteries, tires and other vehicular expendables are generally exchanged at the garage that services the IBGP vehicles.

c. The closed blowdown drain tank and the skimmer basin tanks have open tops and are thereby exposed to rainfall. However, there is no runoff from these tanks because they are surrounded by berms. The berms will be maintained to provide 133 percent of above ground tank capacity.

2. Materials of Lesser Quantity

There are miscellaneous materials located around the plant of relatively small quantity. Some are items being stored temporarily and others result from small spills and leaks (i.e., less than a reportable quantity). Stored materials change with time, but can include such items as vehicle batteries and chemical drums. Most stored materials are surrounded by containment berms. Examples of spilled or leaked materials include sulfur and petroleum hydrocarbons. Marathon Oil has both a Spill Prevention Control Countermeasure Plan (SPCC) and a Groundwater Discharge Plan that define policies and procedures for responding to spills and leaks.

C. Current and Historic Structural Controls and Management Practices

Since October 30, 1989, Indian Basin Gas Plant has been operated under the conditions of a Groundwater Discharge Plan (GDP). That GDP was approved by the State of New Mexico and includes the following aspects that affect storm water runoff:

1. A large uphill diversion berm has been constructed around the north and west sides of the plant. It diverts surface runoff away from the plant and reduces the volume of water that can potentially contact polluting materials at the plant.

2. Containment devices have been constructed around most of the chemical storage areas. In most cases, the containment device is an earth berm. In other cases (such as the sulfuric acid tank at the water treatment unit), a steel pan with manual valve is used for secondary containment. Marathon Oil Company is attempting to reduce the use of drums at the IBGP and rely more on bulk chemical storage.

3. Product effluent from most plant equipment is drained through a closed system. In addition, an open collection system has been constructed around much of the plant process equipment. The system consists of concrete pads with curbs, concrete troughs covered with steel grates, drainage collection pipes, sumps and sump pumps. The purpose of this system is to capture material that originates from a leak or spill, convey it to the sump, and pump it into the skimmer basin. Material collected in this manner is ultimately reprocessed or

disposed in the injection well. (Refer to the "Plant Processes" section of the GDP, pages 5 and 6 for descriptions of an integrity test on the open collection system and closed drain system disposal procedures.)

4. Material handling practices include employee education as to proper procedures and spill/leak response, storing chemical containers in containment berms, and routine inspections.

5. Domestic sewage is treated with a septic system on the plant site. It does not contribute any flow to storm water runoff. There are three septic treatment systems, and a warning to avoid non-domestic sewage is posted on each one.

6. Plant equipment is periodically cleaned with detergents, solvents or steam. Consistent with the GDP, cleaning effluent is captured and recycled by Safety-Kleen. As a result, it does not contact storm water.

7. The SPCC for the IBGP has recently been revised, and plant spill response capabilities have been improved.

8. Underground Storage Tanks are not used at IBGP.

9. Spent process catalyst is not exposed to storm water.

D. Current Storm Water Treatment Practices

Storm water from approximately 4 acres of the site drains to the southeast corner and passes through a vegetated strip. Storm water from the remainder of the site drains as sheet flow to the south where it passes through approximately 800 feet of vegetation before it reaches Rocky Arroyo.

E. Spills and Leaks

Since September 9, 1989, there have been five spills or leaks of reportable quantity. They are identified on Exhibit 5 and summarized in Appendix 2. A copy of the SPCC plan is included in Appendix 3. The following information excerpted from pages 7-11 of the GDP "Plant Processes" section describes spill and leak techniques at the IBGP.

F. Sampling Data

There is no storm water quality data available for the IBGP.

G. Risk Identification and Summary of Potential Pollutant Sources

The most significant risk for storm water pollution is a spill or leak of petroleum hydrocarbon, sulfur, glycol or other process chemicals. This risk is the reason Marathon Oil has been upgrading collection and containment capabilities since the late 1980's. Potential pollutant sources are summarized below. The purpose of this summary is to identify areas that need to be inspected and where storm water pollution prevention must be practiced.

1. Petroleum hydrocarbons spilled or leaked from pipelines, process vessels or process piping. Potential locations include all portions of the site with piping and process equipment. Runoff would flow as indicated on Exhibit 4.

2. Molten sulfur produced in the Sulfur Recovery Unit is loaded into trucks. A spill or leak during the handling process constitutes a potential storm water pollutant.

3. Solid wastes, if not controlled in the dumpster, could create a potential pollutant source.

4. Solid sulfur at the west storage pit is a potential pollutant source.

5. Particulate accumulation downwind from the flares and stacks could contain pollutants.

6. Drum and equipment storage areas could contain pollutants.

7. Dust produced by operations is not a significant problem at this plant.

V. STORM WATER MEASURES AND CONTROLS

Existing storm water controls consist of two primary techniques: reducing runoff and controlling pollutants. Runoff volume from the plant is reduced as a result of the berm along the north and west sides. It shields the site and keeps uphill sheet flow from entering the plant. This reduces the volume of storm water, and thereby reduces the magnitude of the storm water pollution control task.

Pollutant control is accomplished by maintaining materials in tanks, vessels and pipes. This is described in other parts of this SWPPP and in detail in the GDP. The GDP also specifies construction of other improvements that aid in storm water pollution prevention. The improvements were begun during 1989 and are still in progress. Improvements completed to date include:

1. Construction of secondary containment around most above ground storage tanks,

2. Containment and/or elimination of small equipment leaks,

3. Construction of secondary containment for drum storage areas,

4. Clean up of areas of significant ground contamination,

5. The closed drain system tank (including the salt water tank) is tested twice each year, and

6. Continued use and maintenance of the bermed landfarm for treatment of contaminated soil.

Additionally existing berms will be supplemented in order to completely contain the landfarm/sulfur pit/dumpster area.

Experience with plant operations indicates that current controls and procedures provide protection against storm water pollution under normal circumstances. In addition, downslope vegetation provides filtering and treatment to surface flow before it reaches Rocky Arroyo. Procedures and safeguards implemented under the SPCC and GDP provide further protection against storm water pollution.

If future experience indicates that additional storm water pollution prevention techniques should be employed, the following two are suggested for this plant.

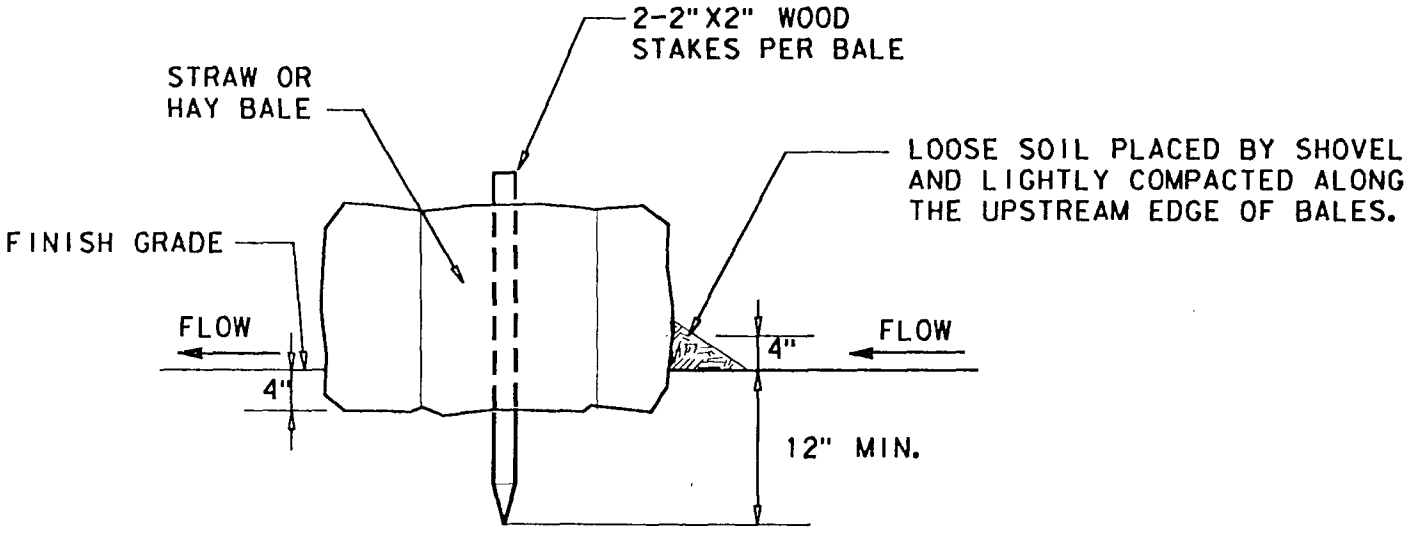
A. Downslope Containment Device

A surface water runoff containment device could be constructed downslope from the plant. The purpose is to capture and contain runoff from the entire plant and adjacent storage areas. It is expected the device would provide two significant benefits: backup spill containment and increased plant surface water runoff treatment by means of a vegetated buffer.

Sample devices are shown on Exhibits 6A, 6B and 6C. Any combination of these or similar low maintenance devices could be utilized. The suggested placement would be to create a continuous barrier around a ground contour.

B. Increased Vegetation

The suggested location is along the uphill side of a containment device. It will perform in conjunction with the downslope containment device described above. Native vegetation and/or improved grass can be utilized. The selection of vegetation would be based on experience at the plant.



TYPICAL ENTRENCHED BALE PLACEMENT

NO SCALE

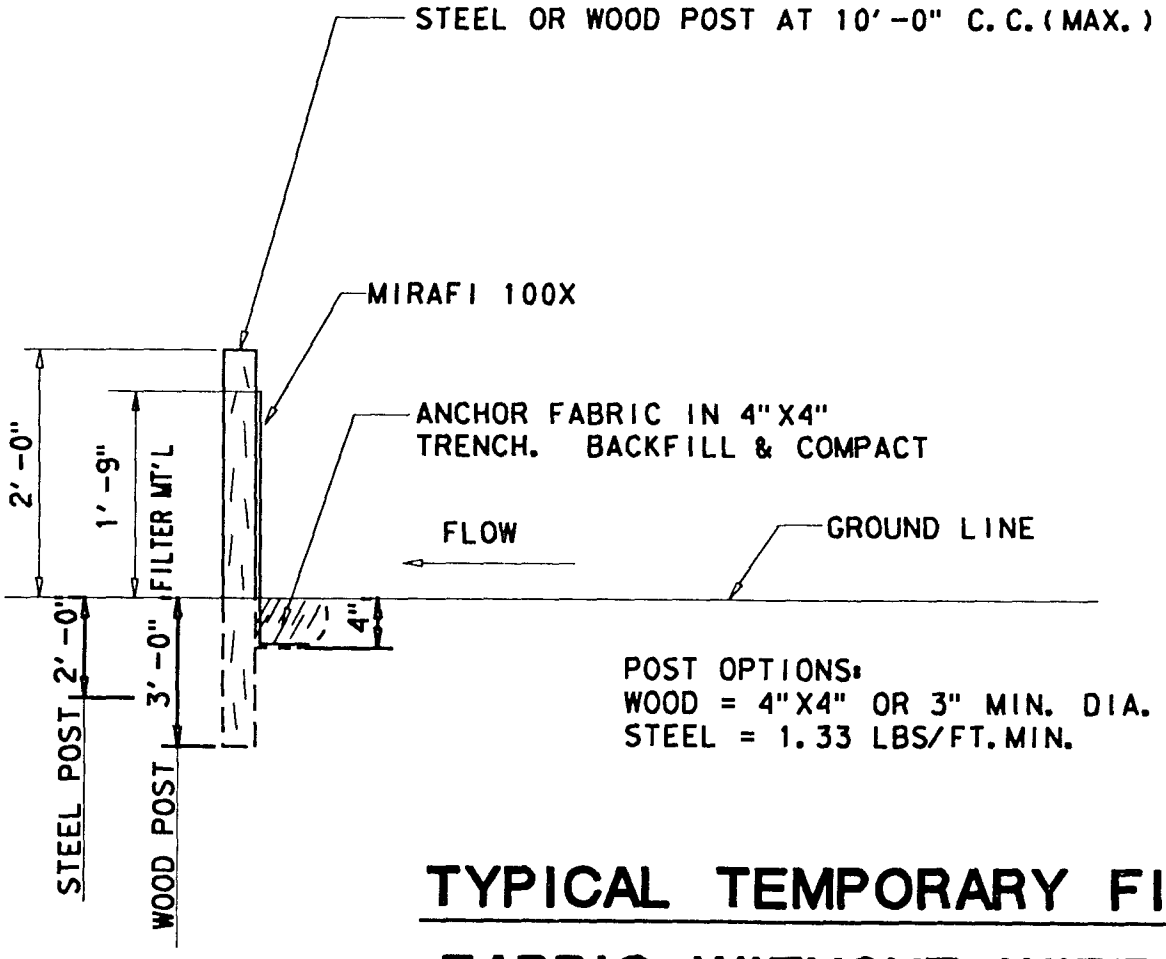
Carter :: Burgess

CARTER & BURGESS, INC.
3440 HULEN STREET
FORT WORTH, TX 76107-7254

MARATHON OIL COMPANY
INDIAN BASIN GAS PLANT
STORM WATER POLLUTION PREVENTION PLAN

EXHIBIT 6A

C&B JOB NO. 92137501F



TYPICAL TEMPORARY FILTER FABRIC WITHOUT WIRE FABRIC SILT FENCE DETAIL

NO SCALE

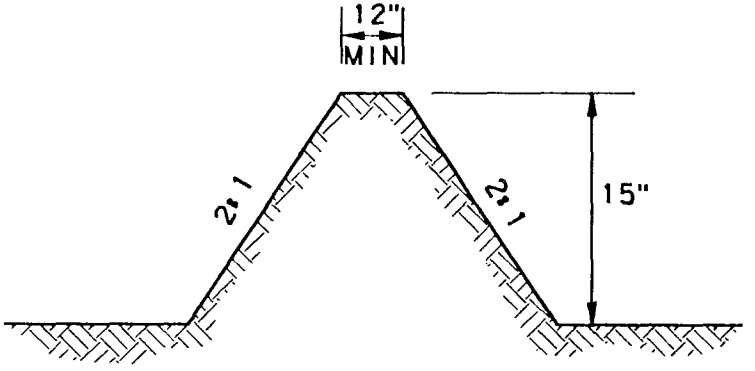
NOTE: PREFABRICATED SILT FENCE IS AN ACCEPTABLE ALTERNATIVE

Carter::Burgess
CARTER & BURGESS, INC.

MARATHON OIL COMPANY
INDIAN BASIN GAS PLANT
STORM WATER POLLUTION PREVENTION PLAN

EXHIBIT 6B

C&B JOB NO. 92137501F



CROSS-SECTION

PERIMETER EARTH BERM

NO SCALE

Carter Burgess
Consultants in Engineering, Architecture, Planning and the Environment
CARTER & BURGESS, INC.
3840 HULEN STREET
FORT WORTH, TX 76107-7234

MARATHON OIL COMPANY
INDIAN BASIN GAS PLANT
STORM WATER POLLUTION PREVENTION PLAN

EXHIBIT 6C

C&B JOB NO. 92137501F

VI. GOOD HOUSEKEEPING

A very important aspect of storm water pollution prevention is "good housekeeping." The purpose is to minimize pollutant exposure to rainfall and runoff. It should become part of routine plant operation. The main components are: **Awareness, Involvement and Alertness – Awareness** that it is important to guard against potentially polluting circumstances; **Involvement** of each person at the plant to participate in storm water pollution prevention; and **Alertness** to improvements in practices or structural controls that could reduce pollution potential at the plant. A few specific examples of housekeeping considerations are listed below. The Team and others at the plant should identify additional considerations as experience suggests.

1. Drums should be sealed and stored inside containment berms,

2. Waste material (even personal items) should be disposed of in the approved manner,

3. To the maximum extent possible, equipment and building cleaning shall be done without detergents, and

4. Equipment and vehicles should be inspected routinely for leaks.

A. Inspection and Preventive Maintenance

1. Storm water controls shall be inspected on a regular schedule by the Team Leader who will assess effectiveness and integrity of the following items:

   a. Containment Berms -- Inspect visually to make sure they have consistent height and thickness,

   b. Materials Storage Practices -- Assess current practices for possible improvements and compare to the requirements of the GDP and this SWPPP,

   c. Piping and Storage Vessels -- Perform visual inspections and pressure tests as experience indicates is appropriate,

   d. Vehicle Operation and Service Areas -- Remove contaminated soil and place it in the landfarm,

e. Inspect the landfarm soil for signs of oil (such as a sheen or odor). If oil is detected, increase frequency of turning and watering the soil. Increase capacity of the landfarm if needed, and

f. Housekeeping Practices -- Remain alert for practices and controls that could be altered to increase protection against pollution. Note ideas during inspections and discuss them with the Team Leader.

2. If additional controls are implemented, inspect such items as:

a. Downslope Containment Device(s) -- Check for uniformity and complete coverage, and

b. Vegetated Buffer -- Check for hardiness and coverage. Supplement with more and/or different vegetation in order to maximize the effectiveness of this treatment technique.

VII. SPILL PREVENTION AND RESPONSE PROCEDURES

All employees have responsibility for responding to spill situations without waiting for instructions from a supervisor or company officer. Marathon Oil Company has implemented specific spill response procedures. They are described in the Spill Prevention Control Countermeasure Plan and the Groundwater Discharge Plan. Current versions of both plans are included here by reference.

Possible spill materials are listed below in the anticipated order of potential magnitude:

1. Petroleum hydrocarbons,

2. Process chemicals,

3. Sulfur, and

4. Solid Waste.

VIII. EMPLOYEE TRAINING

All employees shall be trained to prevent storm water pollution. The Team Leader has ultimate responsibility for employee training. The Team Leader will initially train all employees regarding storm water pollution prevention at the plant, and thereafter initiate new employees to the procedures. Additional training will be scheduled at the same meetings when the SPCC is discussed.

A. Employees will be informed of:

1. The need for storm water pollution prevention,

2. Goals of plant storm water pollution prevention efforts,

3. Categories of materials that represent significant potential for storm water pollution and approved handling procedures,

4. Operational practices that could minimize storm water pollution (Good Housekeeping),

5. Techniques for avoiding storm water pollution,

6. Spill response procedures,

7. Team structure and communication channels regarding storm water pollution prevention, and

8. Existence of fines and civil penalties for storm water pollution.

B. The Team Leader will further encourage employees to present ideas that could improve plant storm water pollution prevention.

IX. RECORDKEEPING AND INTERNAL REPORTING PROCEDURES

The Team Leader shall inspect the entire plant site on a regular schedule and after each rainfall event that produces significant surface runoff. A **STORM WATER INSPECTION REPORT** form shall be completed for each inspection. Spills and leaks shall be corrected according to requirements of the GDP and the SPCC.

A. The Team Leader shall keep the following records at the plant site:

1. This original SWPPP and all revised versions,

2. Minutes of employee training sessions,

3. Copies of all inspection and spill response reports,

4. Copies of exhibits utilized for storm water pollution planning and control, and

5. Copies of communications with the State of New Mexico, U.S. Environmental Protection Agency and all other parties concerning storm water pollution matters.

(Additional copies of the documents listed above can be kept at other locations, but the originals shall be kept at the plants.)

B. Open communications shall be used for matters relating to storm water pollution. The following principles are guidelines for communications, but may be modified when direct action is needed to reduce storm water pollution.

1. Each employee is empowered to take immediate action to prevent or reduce storm water pollution. All such actions shall be reported at the first available opportunity to the Team Leader.

2. Any employee can ask questions, discuss ideas, make suggestions or any other matter regarding storm water.

3. The Team Leader has responsibility and authority over daily plant operations as they relate to storm water pollution prevention.

X. NON-STORM WATER DISCHARGES

Marathon Oil Company certifies that discharges from the Indian Basin Gas Plant have been evaluated and that there are no non-storm water discharges present in runoff from the plant. (Note that the only necessary method of evaluation at the IBGP is visual inspection.) Potential non-storm water discharges are materials spilled or leaked from the plant, or storm water that has contacted any material not listed below. In that regard, the only permitted non-storm water discharges from the IBGP are:

1. Discharges from fire fighting activities,

2. Potable water sources,

3. Irrigation drainage,

4. Lawn watering,

5. Routine external building and equipment washdowns which do NOT include use of detergents,

6. Air conditioning condensate,

7. Springs, and

8. Uncontaminated groundwater.

XI. EROSION, SEDIMENT AND DUST CONTROL

Erosion and sediment do not appear to be significant contributors to storm water pollution at the IBGP. In spite of this, inspections should monitor soil erosion, sedimentation and dust caused by vehicle traffic as potential sources of storm water pollution. If they prove to be significant sources, controls will be necessary.

XII. RUNOFF MANAGEMENT

The techniques described previously for controlling storm water pollution are considered appropriate for initial use at the IBGP. Prevention and control of storm water pollution at the plant is a continuing process. Additional or modified techniques shall be tested and/or implemented as Team experience suggests. The process is evolving, but the goal will always be to develop the most effective techniques, procedures and controls for avoiding storm water pollution.

XIII. COMPREHENSIVE SITE COMPLIANCE EVALUATION

The Team Leader shall conduct annual Comprehensive Site Compliance Evaluations. The purpose is to determine whether the plant is in compliance with the SWPPP and, as an additional consideration, whether the current SWPPP is effective. The Comprehensive Site Compliance Evaluation shall include the following three steps.

A. Step 1 - Site Inspection

The site shall be thoroughly inspected. Areas that drain any plant operation shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage paths. Measures and Controls described previously shall be evaluated to determine whether they are operating correctly, whether they are adequate, or whether additional and/or different Measures and Controls are needed. A visual inspection shall be made of equipment needed

to implement and maintain the Measures and Controls (including spill response equipment).

B. Step 2 - Revisions to the SWPPP

The SWPPP shall be updated based on the results of the inspection. The goal of revising the SWPPP is to increase effectiveness of pollutant reduction Measures and Controls. Particular attention shall be paid to updating Part IV, POTENTIAL POLLUTANT SOURCES and Part V, STORM WATER MEASURES AND CONTROLS. Revisions to the SWPPP shall be made under the supervision of the Team Leader. Changes identified in the SWPPP revision shall be fully implemented within twelve weeks after the Comprehensive Site Evaluation.

C. Step 3 - Inspection Report

The Team Leader shall prepare, or supervise preparation of, the **COMPREHENSIVE SITE EVALUATION SUMMARY REPORT.** A blank copy is included in Appendix 4. It shall be signed by a responsible corporate officer or his duly authorized representative. (Refer to Part VII.G. of the NPDES nationwide general permit for additional information.)

XIV. CONSISTENCY WITH OTHER PLANS

If this SWPPP conflicts in any regard with other plans affecting storm water quality at the plant sites, the more stringent requirement shall be followed.

XV. EPCRA SECTION 313 REQUIREMENTS

Based on current information, IBGP is not a plant subject to EPCRA Section 313 water priority chemical regulations.

The Standard Industrial Classification Code (SIC Code) for the IBGP is 1311.

XVI. SAMPLING REQUIREMENTS

At present, there will not be storm water sampling and testing at IBGP. If, however, future circumstances require Marathon Oil Company to submit a Form R to the EPA for IBGP, or if Section 313 water priority chemicals are exposed to storm water, water quality monitoring will probably be required thereafter.

XVII. PROPER OPERATION AND MAINTENANCE

IBGP shall at all times properly operate and maintain all Measures and Controls described in Part V (or added after the initial SWPPP), plus related appurtenances. Regarding supplemental protection, the NPDES General Permit states that, "Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee only when necessary to achieve compliance with the conditions of the permit."

XVIII. CERTIFICATION

The following certification shall be signed by a responsible corporate officer of Marathon Oil Company or by a duly authorized representative of that person. (Refer to Part VII.G. of the General Permit for additional information.)

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

A. R. Kukla

Signature

6/27/94

Date

A. R. Kukla

Name

Production Manager

Title

Mid-Continent Region

STORM WATER
POLLUTION PREVENTION TEAM
MARATHON OIL COMPANY

NAME	TITLE	OFFICE PHONE NUMBER	EMERGENGY PHONE NUMBER	RESPONSIBILITIES
MIKE SCHWESER	FOREMAN			Implement Initial SWPPP (1)
MIKE SCHWESER	FOREMAN			Train Employees about NPDES (2) and SWPPP
MIKE SCHWESER	FOREMAN			Maintain Pollution Prevention Controls
MIKE SCHWESER	FOREMAN			Perform Routine Inspections and Fill Out Report Forms
MIKE SCHWESER	FOREMAN			Assess Performance of Controls and Procedures
MIKE SCHWESER	FOREMAN			Decide When to Revise Controls and Procedures
MIKE SCHWESER	FOREMAN			Implement Revisions to Controls and Procedures
MIKE SCHWESER	FOREMAN			Revise SWPPP when Controls and/or Procedures Change

(1) SWPPP - Storm Water Pollution Prevention Plan.
(2) NPDES - National Pollutant Discharge Elimination System Program, administered by the U.S. Environmental Protection Agency.

STORM WATER
POLLUTION PREVENTION TEAM
MARATHON OIL COMPANY

NAME	TITLE	OFFICE PHONE NUMBER	EMERGENGY PHONE NUMBER	RESPONSIBILITIES
MIKE SCHWESER	FOREMAN			Maintain File for SWPPP and Supporting NPDES Documents
MIKE SCHWESER	FOREMAN			Spill Prevention - Set up Emergency and Reporting Procedures to Isolate and Contain Section 313 Water Priority Chemicals
MIKE SCHWESER	FOREMAN			Evaluate and Report Spills
MIKE SCHWESER	FOREMAN			Conduct Comprehensive Spill Compliance Evaluation

STORM WATER
POLLUTION PREVENTION TEAM
MARATHON OIL COMPANY

NAME	TITLE	OFFICE PHONE NUMBER	EMERGENGY PHONE NUMBER	RESPONSIBILITIES
				Implement Initial SWPPP (1)
				Train Employees about NPDES (2) and SWPPP
				Maintain Pollution Prevention Controls
				Perform Routine Inspections and Fill Out Report Forms
				Assess Performance of Controls and Procedures
				Decide When to Revise Controls and Procedures
				Implement Revisions to Controls and Procedures
				Revise SWPPP when Controls and/or Procedures Change

(1) SWPPP - Storm Water Pollution Prevention Plan.
(2) NPDES - National Pollutant Discharge Elimination System Program, administered by the U.S. Environmental Protection Agency.

STORM WATER
POLLUTION PREVENTION TEAM
MARATHON OIL COMPANY

NAME	TITLE	OFFICE PHONE NUMBER	EMERGENGY PHONE NUMBER	RESPONSIBILITIES
				Maintain File for SWPPP and Supporting NPDES Documents
				Spill Prevention - Set up Emergency and Reporting Procedures to Isolate and Contain Section 313 Water Priority Chemicals
				Evaluate and Report Spills
				Conduct Comprehensive Spill Compliance Evaluation

SPILL SUMMARY

SPILL #	DATE	SPILL TYPE	SPILL QUANTITY	QUANTITY RECOVERED	CAUSE
1306	11-15-92	CONDENSATE	14 BBLS	2 BBLS	N/A
385	01-21-92	CONDENSATE	258 BBLS	250 BBLS	A leak occured within a suction line to out-of-service condensate tanks.
960	08-22-90	CONDENSATE	10 BBLS	0 BBLS	N/A
962	04-30-90	CONDENSATE/WATER	15 BBLS	0 BBLS	N/A
966	11-22-89	CONDENSATE	10 BBLS	0 BBLS	N/A

STORM WATER POLLUTION PREVENTION PLAN
MONTHLY INSPECTION REPORT
INDIAN BASIN GAS PLANT
EDDY COUNTY, NEW MEXICO

Date:_____ Inspector (please print):_____

ITEM	IN CONFORMANCE	EFFECTIVE	VIOLATIONS, RECOMMENDATIONS, AND COMMENTS
Uphill diversion berm	YES/NO	YES/NO	
Equipment drip pads, collection and sump/pump system	YES/NO	YES/NO	
Secondary containment devices	YES/NO	YES/NO	
Solid waste collection	YES/NO	YES/NO	
Contaminated soil disposal	YES/NO	YES/NO	
Perimeter security fence	YES/NO	YES/NO	
Drum and chemical storage	YES/NO	YES/NO	
Housekeeping	YES/NO	YES/NO	
	YES/NO	YES/NO	

NOTE: These reports shall be kept on file as part of the storm water pollution prevention plan for at least one year from the date that the permit expires.

CERTIFICATION STATEMENT: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name: Marathon Oil Company
Address: P.O. Box 522, Midland, Texas 79702-5233
Telephone: (915)682-1626

Inspector Signature:_____

STORM WATER POLLUTION PREVENTION PLAN
COMPREHENSIVE SITE COMPLIANCE REPORT
INDIAN BASIN GAS PLANT
EDDY COUNTY, NEW MEXICO

Date:_____ Inspector (please print):_____

ITEM	IN CONFORMANCE	EFFECTIVE	VIOLATIONS, RECOMMENDATIONS, AND COMMENTS
Uphill diversion berm	YES/NO	YES/NO	
Equipment drip pads, collection and sump/pump system	YES/NO	YES/NO	
Secondary containment devices	YES/NO	YES/NO	
Solid waste collection	YES/NO	YES/NO	
Contaminated soil disposal	YES/NO	YES/NO	
Perimeter security fence	YES/NO	YES/NO	
Drum and chemical storage	YES/NO	YES/NO	
Housekeeping	YES/NO	YES/NO	
Spill response equipment	YES/NO	YES/NO	
	YES/NO	YES/NO	
	YES/NO	YES/NO	
	YES/NO	YES/NO	
	YES/NO	YES/NO	

NOTES: These reports shall be kept on file as part of the storm water pollution prevention plan for at least one year from the date that the permit expires.

If there are no incidents of non-compliance noted, signing this form indicates that the facility is in compliance with the Storm Water Pollution Prevention Plan and the general permit.

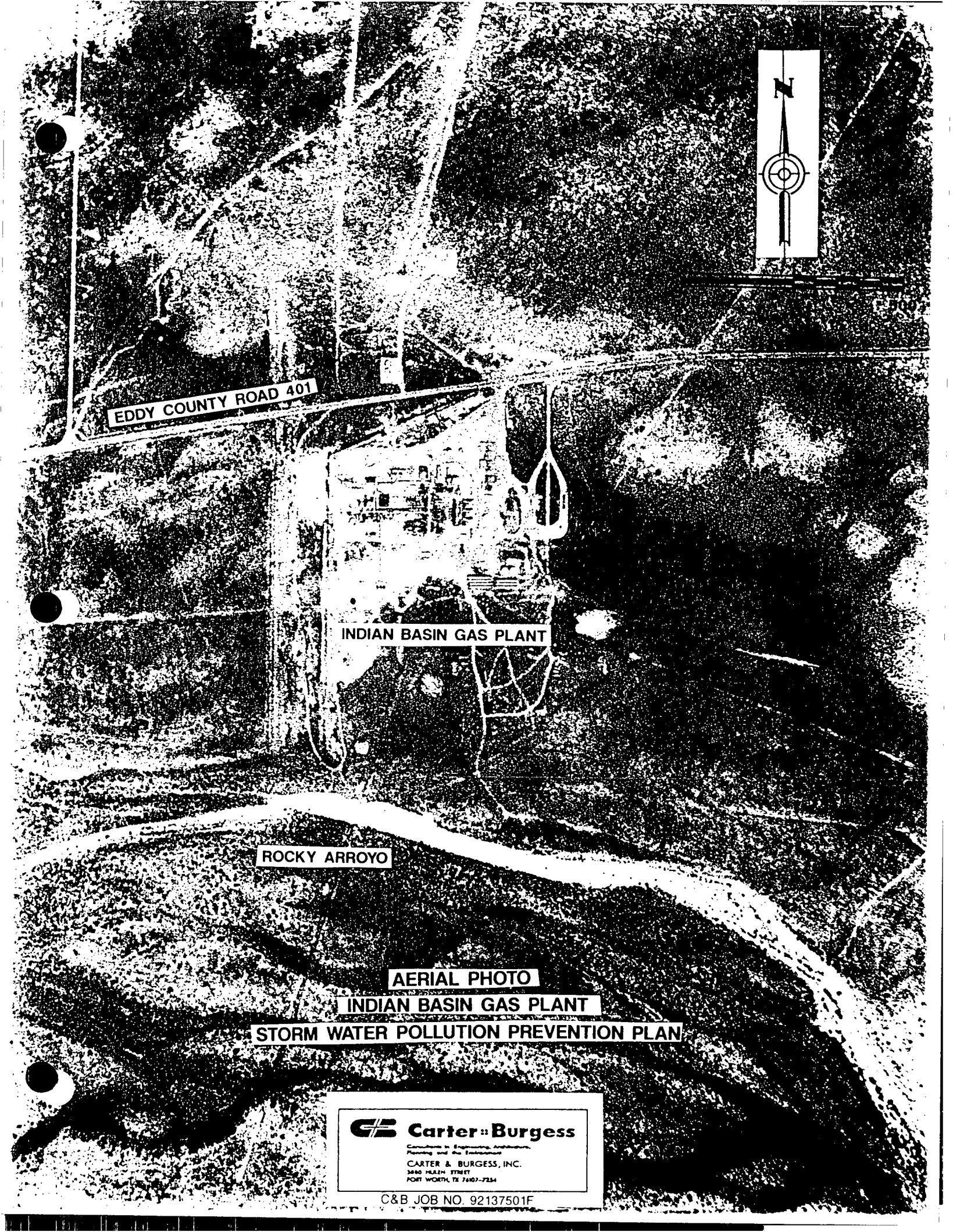
The Storm Water Pollution Prevention Plan shall be revised within two weeks after the date of this inspection if changes are required, based on the results of the inspection. Revisions include changes to the description of potential pollutant sources and measures and controls.

Any revisions made to the Storm Water Pollution Prevention Plan shall be implemented within twelve weeks after the date of this inspection.

CERTIFICATION STATEMENT: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name: Marathon Oil Company
Address: P.O. Box 552, Midland, Texas 79702-5233
Telephone: (915)682-1626

Inspector Signature: _____



AERIAL PHOTO
INDIAN BASIN GAS PLANT
STORM WATER POLLUTION PREVENTION PLAN

Carter Burgess
Consultants in Engineering, Architecture, Planning and the Environment
CARTER & BURGESS, INC.
3400 MAIN STREET
FORT WORTH, TX 76107-7234

C&B JOB NO. 92137501F

U.S. Environmental Protection Agency
National Pollutant Discharge Elimination System (NPDES)
STORM WATER GENERAL PERMIT COVERAGE NOTICE

December 31, 1992

Dear Operator:

Your Notice of Intent (NOI) for the facilty noted below has been processed by the U.S. Environmental Protection Agency. This facility is authorized to discharge storm water associated with industrial or construction activity under the terms and conditions imposed by EPA's NPDES storm water general permit issued for use in the state of New Mexico. Your facility's NPDES storm water permit number is NMR00A170.

EPA's storm water general permit requires certain storm water pollution prevention and control measures, possible monitoring and reporting, and annual inspections. Among the conditions and requirements of this permit, you must prepare and implement a pollution prevention plan (PPP) that is tailored to your industrial or construction site. Enclosed is a summary guidance document designed to assist you in the development and implementation of your PPP. The summary is organized according to the phases of the pollution prevention planning process. A set of worksheets and an example of a pollution prevention plan are provided for your assistance. As a facility authorized to discharge under this storm water general permit, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

FACILITY:

Marathon Oil Co
329 Marathon Rd
Lakewood , NM 88254-
322756, 1043414
, , ,

OPERATOR:

Marathon Oil Company
Po Box 552
Midland, TX 79702-

If you have general questions concerning the storm water program, or need to obtain a copy of the permit, please call the Storm Water Hotline at (703) 821-4823.